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INDICATIONS AND CONTRAINDICATIONS FOR MEDULLARY NAILING OF FRACTURES

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American surgeons have now had sufficient experi- ice with medullary fixation to permit them to accept this ethod as a valuable addition to our armamentarium in e treatment of fractures of long bones. However, the in- oduction of a suitable nail may require an operative posure of the fracture site, and this converts a simple acture into a compound one with its attendant danger of fection and of nonunion. Furthermore, the danger of fection seems to be greater after medullary nailing than ter most other clean surgical operations. Consequently, ie method should not be used routinely and fractures iat can be treated satisfactorily by closed reduction and cternal fixation, or by traction, should be so treated. The equency with which medullary fixation is used will and iould vary directly with the surgeon's interest and skill i the use of the method and indirectly with his ability) treat fractures by more conservative measures.

The insertion of a medullary nail is usually a relatively mple procedure, but at times it may entail a very dif- cult operation that is fraught with danger to the patient. onsequently, it should not be tried by the uninitiated. prerequisite for the insertion of such a nail is the pres- nce of a surgeon who has had experience with the ethod and is available to perform the operation. It is lso necessary that the proper nails for this particular one be on hand and that the operation set contain in- truments for inserting and extracting the nail. These hould include a long drill and broach or reamer for en- rging the canal if necessary and a hacksaw or large bolt utter for cutting the nail off in case it should become im- acted and the surgeon not be able to remove it without nduly shocking the patient.

INDICATIONS FOR MEDULLARY NAILING

Bones Most Suitable for Nailing.—The bones most uitable for nailing are the long bones. In my opinion the elative frequency with this procedure as indicated in ractures of various bones is: femur, phalanges of fingers, ibia, metacarpals, radius and ulna, humerus, fibula, and metatarsals. The femur is ranked first because of the difficulties in treating fractures of the shaft of this bone by more conservative methods and of the shortening of the period of hospitalization and of disability that result from a successful nailing of a fracture of the shaft of the femur.

The fingers are ranked second because fixation with a Kirschner wire may not only preserve function in the fractured finger but permits the use of the rest of the hand while the fracture is healing and tends to prevent the stiffness that too often follows prolonged immobilization of this member. The tibia is ranked third because Lottes [1] has shown that closed reduction and blind nailing of this bone is a practical procedure and because results are better than those obtained by other methods (Lottes and Key [2]). The humerus is put low in the scale because most fractures of this bone can be treated successfully by much simpler methods, for instance, the hanging cast. The reasons for the order in which the other bones are ranked should be apparent to anyone who treats many fractures, but opinion may vary as to the relative frequency with which nailing is indicated in fractures of the various bones. However, the nail should be reserved for those fractures where it presents a definite advantage over the results obtained by more conservative methods or where circumstances justify the added risk in order to shorten the periods of hospitalization and disability.

Type of Fracture.—It is generally agreed that the ideal fracture for nailing is a simple transverse or short oblique fracture in the middle third of a long bone. To this should be added double and triple fractures of the shaft of a long bone, because of the difficulties in treating these by closed reduction or traction and the tendency of one or more of the fractures not to unite when treated conservatively or by open reduction and plating. However, with increased experience surgeons are now finding that fractures within 3 in. (7.6 cm.) of either end of the femur or tibia can be nailed successfully in the conventional manner if the nail is supplemented by external fixation. This is especially

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Read before the Eighth Clinical Meeting of the American Medical Association, Miami, Fla., Nov. 30, 1954.

[1] Lottes, J. O.: Blind Nailing Technique for Insertion of the Triflange Medullar Nail; Report of 300 Nailings for Fractures of the Shaft of the Tibia, A. M. A. 155:1039-1042 (July 17) 1954.

[2] Lottes, J. O., and Key, J. A.: Complications and Errors in Technique in Medullary Nailing of the Femur, in Clinical Orthopaedics, DePalma, A. F., litor, *Philadelphia*, J. B. Lippincott Company, 1953, vol. 2, pp. 33-50.

true of the tibia, because here we routinely apply a walking cast that is to be worn until the fragments are united. Also, with the use of two slightly curved Rush nails it is possible to fix supracondylar fractures of the femur or humerus quite firmly, and this may be supplemented by external fixation if necessary. Likewise, fractures of the proximal portion of the humerus can be stabilized with a nail or wires driven down through the greater tuberosity and into the shaft. This is especially indicated in fracture-dislocations of the shoulder.

Vom Saal[3] has used Kirschner wires to fix fractures near and including the ends of the metacarpals and phalanges, and Rush and Rush[4] have used a Rush nail through the major fragment and down the medullary canal of the radius in the treatment of severe Colles' fractures. Some surgeons are successful in using a medullary nail in the treatment of long oblique fractures and of comminuted fractures, especially of the butterfly type. But in these it may be necessary to reinforce the nail with one or more screws or encircling wires or bands, just as it may be advisable to bridge the fracture of a femur with a bone plate in instances where the nail does not fit tightly enough to prevent rotation deformity. This fixation in rotation is one of the reasons why it is advisable, especially in the femur, to use the largest nail that the bone will accommodate. Also the surgeon should supplement the nail with external fixation where there is any doubt as to the efficiency of the fixation by the nail.

Whether compound fractures may be nailed either immediately at the time of débridement or later after the wound has healed is a moot question. The insertion and leaving of the large foreign body in the bone undoubtedly interferes with the blood supply of the bone and increases the trauma to soft tissues and thus adds to the danger of infection. Consequently, many surgeons feel that the nail should not be inserted at the time of the débridement and primary suture. Others, however, believe that the more perfect immobilization produced by the nail more than balances the added danger of infection and insert the nail at the time of the débridement. When the nail is inserted at the time of the débridement, the wound may be closed, drained, or packed open. The presence of the nail does not appreciably affect the treatment of the wound except that it affords fixation of the fragments and thus tends to facilitate care of an open wound and lessen the spread of infection.

If so much time has elapsed since the injury that the wound cannot be closed by primary suture with relative safety, it is unwise to insert the nail at this time and the wound should be left open and the fracture treated by traction or a cast. The time of relative safety for primary suture is from 6 to 12 hours, depending upon the severity of the damage to the soft tissues and of the contamination of the wound and whether the patient has had adequate antibiotic therapy. When the wound is closed by delayed primary or secondary suture a medullary nail may be inserted only if the wound is unusually clean; otherwise one should wait until the wound is healed and then insert the nail. If it can be done without exposing the fracture, the nail may be inserted in about two weeks, and when this is done the skin sutures should not be removed until after the nail is in place.

Ordinarily the presence of infection at the fracture site is a contraindication for medullary nailing. However, in selected cases it is a very valuable method even in the presence of infection and may obviate prolonged immobilization in bed, with sepsis, cachexia, kidney stones, and eventual nonunion. Brav and Jeffress[5] have reported 8 such cases of old, infected gunshot fractures of the femur, and Lottes has nailed 12 chronically infected fractures with nonunion (each with a high percentage of successes). At the operation the wound is carefully débrided, the ends of the bone are freshened, and the nail is then inserted in the ordinary manner. The wound is left wide open, preferably with posterior drainage, the extremity is immobilized in a splint or a plaster cast, and antibiotic treatment is given. There appears to be little danger of spreading the infection down into the distal fragment.

In pathological fractures of long bones medullary nailing may be the best form of treatment available because it shortens the convalescence and relieves the pain in patients who may not have very long to live and to whom each day of normal activity is important. Here, too, there appears to be little danger of the nail spreading the tumor down the medullary canal. In selected impending pathological fractures it is good practice to insert a medullary nail before the fracture occurs. In fractures of long bones with delayed union or nonunion, a medullary nail is an excellent type of internal fixation, as it tends to immobilize the ends of the fragments and permits impaction and partial weight bearing. If the bone ends are sclerotic it may be necessary to ream out the medullary canal in order to permit passage of the nail. When the site of the nonunion is exposed for nailing and after the nail is in place, one or more grafts of autogenous compact or cancellous bone are placed across the fracture site and the soft tissues are sutured over them. No grafts are used if there is evidence of infection at the fracture site. In the leg or forearm it may be advisable to resect a section of or obliquely osteotomize the intact bone in order to permit approximation and impaction of the bone ends. Some surgeons advise the routine insertion of bank or autogenous bone grafts when a fresh fracture has been nailed by open operation, but this has not been our practice.

CONTRAINDICATIONS FOR MEDULLARY NAILING

Fortunately, the contraindications for medullary nailing are not as numerous as the indications. They may be divided into general and local: The first general contraindication, as stated above, is the lack of the necessary equipment and skilled personnel. The second is the condition of the patient. It is unwise to subject a patient in shock or impending shock to a major elective operation, and the insertion of a medullary nail is an elective procedure. It is better to immobilize the fracture by traction or in a plaster cast or splint and operate on the fracture later after the general condition of the patient has improved. Likewise, in a case of multiple fractures where such treatment is indicated for two of more fractures, it may be advisable to nail one and then do the others a few days later. This will depend upon how smoothly the first op-

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3. vom Saal, F. H.: Intramedullary Fixation in Fractures of the Hand and Fingers, J. Bone & Joint Surg. 35-A: 5-16 (Jan.) 1953.

4. Rush, L. V., and Rush, H. L.: Longitudinal Pin Fixation in Colles' Fracture of the Wrist, South. Surgeon 15: 679-686 (Sept.) 1949.

5. Brav, E. A., and Jeffress, V. H.: Modified Intramedullary Nailing in Recent Gunshot Fractures of the Femoral Shaft, J. Bone & Joint Surg. 35-A: 141-152 (Jan.) 1953.

eration goes and how well the patient is doing when it is finished. On the other hand, in a patient who is in poor general condition after long conservative treatment in bed for a fracture of the femur it may not be possible to get him in good condition before the operation. In such cases the fixation of the fracture with a medullary nail may be a lifesaving measure and while risky is justified even in the presence of pressure sores. With careful preparation of the skin and draping of the patient, it is possible to exclude such areas from the operative field and by the preoperative and postoperative use of antibiotics to lessen the danger of infection.

Infection in or near the fracture site is usually a contraindication, but, as mentioned above, there are exceptions to this rule. Poor condition of the skin over the operative field is a danger that may be overlooked. This is especially apt to be present after prolonged immobilization in a plaster cast. I have seen one case of postoperative infection after nailing of the femur that I attributed to this cause. A longer time should have been allowed after the removal of the cast and until it was possible to get the skin over the operative field into good condition. Also in reopening a recent wound that has been closed after débridement of a compound fracture or after open reduction and internal fixation of a simple fracture the surgeon should look for evidence of a low-grade infection and take cultures from the depth of the wound. In such cases, even when no evidence of infection is found, it is advisable to place a small drain in the wound and remove it after 48 hours if all seems to be going well or to open the wound widely if there is evidence of infection. I have seen one such infection of a tibia that had been fixed with a metal plate two weeks previously. As the fragments were maintained in slight distraction I decided to remove the plate and insert a medullary nail. No evidence of infection was seen at the operation, but in spite of postoperative antibiotic therapy an infection occurred, and it was only after several months of drainage and a third operation that union and final healing of the wound were secured. The possibility of inserting a nail in the presence of chronic infection has been considered above.

Age of the patient may also be considered a contraindication, because, while in patients of advanced age I am inclined to nail a femur or a tibia in order to shorten the disability, I do not nail such fractures in children. This is because I am afraid that the passage of the large nail through the epiphysial line might disturb the growth of the bone and also because such fractures can usually be treated satisfactorily by conservative means. I have nailed these bones in adolescents with excellent results and have not seen any disturbance in growth caused by the nail.

A further contraindication is the site and character of the fracture, as discussed above. However, with increased experience and the use of supplemental internal and external fixation I am now finding the nail useful in selected long oblique and comminuted fractures and in those near the ends of the bone. An objection, but not a contraindication for nailing, is that removal of the nail after the fracture has united is usually advisable. This may require a second hospitalization and operation. In many cases, however, the patients do not return for removal of the nail, and it seems probable that many of these nails may remain in situ indefinitely and cause no symptoms.

SUMMARY

While medullary nailing of fractures is a valuable addition to our fracture armamentarium, it is a radical procedure, and usually the proper insertion of such a nail requires an open reduction of the fracture and special equipment. Consequently, it is not recommended for routine use, and fractures that can be treated satisfactorily by more conservative methods should be so treated. The operation may be difficult and should not be undertaken by the uninitiated but reserved for the expert fracture surgeon who is working in a well-equipped hospital. And even he should fit his treatment to the fracture and the patient rather than nail every fracture that can be nailed. Additional fixation in a cast or splint should be used in cases where the nail does not effect sufficient immobilization of the fragments.

Fixation by medullary nailing is especially indicated in simple transverse or short oblique fractures of the middle third of the femur, phalanges, tibia, and forearm bones. In experienced hands the method may be used in fractures nearer the ends of long bones and in long oblique, comminuted, and compound fractures. It is contraindicated in children, in patients in shock, in areas of infection, and in fractures in which an intramedullary nail is not mechanically efficient in immobilizing the fragments.

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Pernicious Anemia.—At the present time many dozens of proprietary preparations contain both folic acid and vitamin B_{12}, usually in addition to other vitamins and iron. These preparations, although often advertised to be good for "all anemias" are not satisfactory for treatment of pernicious anemia. The vitamin B_{12} contained in these oral preparations is not absorbed and is therefore ineffective. Folic acid, on the other hand, is readily absorbed and may produce a hematologic remission while allowing neurologic symptoms to develop or progress. Many of the currently available multivitamin preparations contain sufficient folic acid to correct completely the blood and marrow abnormalities of patients with pernicious anemia.

The early symptoms of pernicious anemia include fatigue, weakness, soreness of the tongue, mild gastrointestinal disturbances and numbness and tingling of the hands and feet. A patient who develops one or the other of these symptoms is very likely to receive a multivitamin preparation, without appreciation of the correct diagnosis. If the preparation contains folic acid, anemia disappears before it was recognized to be present, alimentary symptoms subside and the patient often feels much improved. Weeks or months later, however, progressive neurologic disease will become apparent and may incapacitate the patient while the blood remains normal. At this time the physician often does not think of pernicious anemia, but considers the diagnosis of multiple sclerosis, cord tumor or some other neurologic disease. Since the diagnosis is not recognized, the patient may be deprived of the simple therapy which could have maintained him in excellent health.

Since the use of folic acid has become widespread, almost half of the new patients with pernicious anemia seen at the Johns Hopkins Hospital arrive with neurologic disease in the absence of an appreciable degree of anemia. Folic acid deficiency is extremely rare in the United States, and the indiscriminate use of this vitamin is not justified. Under no circumstances should folic acid in any form be administered to a patient whose symptoms might be those of pernicious anemia.—C. Lockard Conley, M.D., Pitfalls in the Diagnosis of Pernicious Anemia, *GP,* January, 1955.

PRACTICAL SCHEME FOR FLUID AND ELECTROLYTE THERAPY IN CHILDREN

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The purpose of the present paper is to outline in simple, concise form a practical routine for prescribing fluids for parenteral use in pediatric patients. The vast new literature on fluid and electrolyte therapy, stressing the role of potassium, has upset older concepts, which emphasized sodium therapy and acid-base balance, and the result for many busy practitioners has been a certain amount of uncertainty and confusion. At the request of surgeons and pediatricians alike, I have endeavored to draw up a few simple rules for therapy based on the fundamental research of Darrow, Butler, and many others. These rules and principles, which will be outlined later, have been in use in our clinic now for over one year and have proved not only simple and practical but also adaptable to nearly all surgical and medical situations that call for the parenteral use of fluids. First of all, in prescribing the fluid needed by any patient during a 24 hour period, we like to take into account three basic requirements: (1) the daily maintenance requirement; (2) fluids required to compensate for current abnormal losses (e. g., diarrhea, vomiting, and gastric suction); and (3) fluids needed to correct preexisting deficits. Each of these will be discussed in turn.

DAILY MAINTENANCE REQUIREMENTS

Butler [1] has shown that the daily requirements of water, sodium, and potassium in childhood are a function not of age or body weight but more exactly of body surface area. For this reason, in each case we calculate the surface area of the patient, which can be derived from his height and weight by using the familar nomogram of DuBois (contained in the standard pediatric texts of Holt-McIntosh and Mitchell-Nelson, and also available commercially in convenient printed sheets.) From Butler's figures we derive the following daily maintenance requirements per square meter of body surface:

Water	Na	K
1,500 Cc.	30 mEq.	20 mEq.

Thus, a 2-year-old patient with a height of 80 cm. and weight 12 kg. has a surface area of 0.5 square meters and would need daily 750 cc. of water (or sugar solution) containing 15 mEq. of sodium chloride and 10 mEq. of potassium chloride.

We prefer 10% invert sugar as the source of water and calories since it provides more calories than does 5% glucose and obviates the risk of glycosuria so common when 10% glucose solution is used. As the source of sodium chloride we use a special solution containing 17.4 gm. of sodium chloride in 100 cc. of distilled water. This is 3 M sodium chloride and contains 3 mEq. of sodium chloride per cubic centimeter. A similar 3 M solution of potassium chloride that contains 22.3 gm. of potassium chloride per 100 cc. provides 3 mEq. of potassium chloride per cubic centimeter. It, too, is made up in our own hospital, but one could as well use the commercially available molar solutions of sodium and potassium chloride. Thus in the case of the 2-year-old child who has been already described, one might make up the day's fluid as follows: from 1 liter of 10% invert sugar discard 250 cc.; to the remainder add 5 cc. of 3 M sodium chloride and 3.3 cc. of 3 M potassium chloride. Such a mixture contains 15 mEq. of sodium chloride and 10 mEq. of potassium chloride in 750 cc. of water and fulfills the daily maintenance needs. It should drip at such a rate as to require 24 hours for its absorption.

It is noteworthy that by adding the potassium to the entire day's fluid volume one avoids the danger of suddenly "flooding" the patient with too much potassium, as might occur if potassium were given in a separate bottle over a brief period. Another practical point is that patients can tolerate large volumes of water, even twice the basal requirements,[2] provided the salt content is not excessive. For this reason, we might be inclined to use a full liter of sugar solution in the above case instead of only 750 cc. By so doing more calories would be offered without danger of edema. In point of fact, we feel that patients with fever may well require more than 1,500 cc. per square meter per day and lately have tended to give 2,000 cc. per square meter per day for febrile patients and for surgical patients in the first day or two following operation.

REPLACEMENT OF ABNORMAL LOSSES

Whenever there are abnormal losses through diarrhea, vomiting, gastric suction, or spinal fluid leakage, etc., such losses are measured or carefully estimated. On the following day these losses are replaced by appropriate amounts of water, sodium chloride, and potassium chloride given in addition to the daily maintenance requirements. Gastric, intestinal, and biliary juices vary considerably in their composition but are all essentially isotonic with plasma, containing about 150 mEq. of electrolyte per liter.[3] Their potassium content varies from 5 to 20 mEq. per liter. The rest of the cation content is mostly sodium, except in the case of gastric juice, which is high in hydrogen ion.

For practical purposes for each liter of such fluid loss we replace 1,000 cc. of water, 135 mEq. of sodium chloride, and 15 mEq. of potassium chloride. Thus, in the case of the 2-year-old child weighing 12 kg. and having a surface area of 0.5 square meters, if we find the child has lost 200 cc. of diarrheal stool, we will give on the following day 200 cc. of water (as sugar solution), 27 mEq. of sodium chloride and 3 mEq. of potassium chlo-

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From the Department of Pediatrics, Ochsner Clinic.

[1] Butler, A. M.: Parenteral Fluid Therapy in Diabetic Coma, Acta pædiat. 38:59-70, 1949.

[2] Talbot, N. B.; Crawford, J. D., and Butler, A. M.: Homeostatic Boundaries to Safe Parenteral Fluid Therapy, A. M. A. Am. J. Dis. Child. 84:479-481 (Oct.) 1952.

[3] Cooke, R. E., and Crowley, L. G.: Replacement of Gastric and Intestinal Fluid Losses in Surgery: Preliminary Report, New England J. Med. 246:637-641 (April 24) 1952.

ride in addition to the daily maintenance needs. More exactly we would prescribe as follows:

Purpose	Water, Cc.	Sodium, mEq.	Potassium, mEq.
Maintenance	750	15	10
Replacement of current losses through diarrhea	200	27	3
Total	950	42	13

The figure 950 could be rounded off to 1,000 cc., so that in practice we would take 1,000 cc. of 10% invert sugar, add 14 cc. of 3 M sodium chloride and 4.3 cc. of 3 M potassium chloride. This volume should drip slowly over 24 hours.

CORRECTION OF PREEXISTING DEFICITS

The matter is somewhat more complicated in patients admitted in a state of dehydration and acidosis, as for example in infants with diarrhea, in diabetic coma, or in patients with intestinal obstruction or peritonitis. Such patients may have great deficits of water, sodium, and potassium that have to be met. They also have disturbances of pH, but as Darrow and Pratt[4] pointed out acidosis per se is usually of secondary importance, and our first efforts must be to combat shock, restore blood volume, and replace electrolytes. Once this is done the kidneys can nearly always be trusted to adjust the pH of the blood. We no longer depend on determinations of serum bicarbonate to guide us in administering alkali and in fact usually proceed with therapy without drawing blood for this determination.

As stated, in dehydration our first effort is to overcome shock and restore blood volume. For this purpose we use an "initial mix" after the manner of Butler. This initial mix is a solution essentially similar to extracellular fluid but only half isotonic as regards electrolyte. It contains 75 mEq. per liter of sodium, 50 mEq. per liter of chloride, and 25 mEq. per liter of lactate. To prepare the solution we take 1 liter of 5% glucose and add 50 mEq. of sodium chloride (17 cc. of our 3 M sodium chloride) plus 25 mEq. of sodium lactate (we use molar sodium lactate available in ampuls made by Abbott Laboratories, and we add 25 cc. of this to the liter of 5% glucose). The solution is given rapidly over a period of about two to three hours until the patient begins to urinate. As a rule we give 30 cc. per kilogram; then if the patient has voided we discontinue the initial mix. After this we may give a blood transfusion of about 320 cc. per square meter of body surface, if the patient seems to be in shock. In less severe cases the blood is omitted. Next, having reestablished renal function, we must calculate the fluid requirements for the rest of the day.

Butler[1] has shown that in dehydration fluid is lost from both the extracellular and the intracellular compartments, and his balance studies indicate that about half the loss is extracellular fluid and half is intracellular fluid. Extracellular fluid contains much sodium, roughly 150 mEq. per liter, but little or no potassium. Intracellular fluid, on the contrary, contains nearly 150 mEq. per liter of potassium but little or no sodium. In severely dehydrated infants 10% of the body weight may be lost; that is, roughly 100 cc. of fluid is lost for every kilogram of body weight. Of this 100 cc., 50 cc. is extracellular and would contain 7.5 mEq. of sodium, and 50 cc. is intracellular and would contain 7.5 mEq. of potassium. Thus, Butler derived the rule that, with 10% of the body weight lost through dehydration, there is a loss, per kilogram of body weight, of 100 cc. of water, 7.5 mEq. of sodium, and 7.5 mEq. of potassium, which will have to be replaced. However, some of this loss (particularly the *intracellular portion*) represents actual breakdown of protoplasm and cannot be replaced until food is taken and new protoplasm is formed. Thus, for purposes of immediate fluid replacement, our rule is that in cases of 10% dehydration one should replace, per kilogram of body weight, only 80 cc. of water, 6 mEq. of sodium, and 4 mEq. of potassium. Unfortunately, we have no method other than clinical judgment for estimating the amount of weight lost by the patient before he comes to us. In practice, if dehydration seems severe, we assume 10% weight loss and proceed to replace water, sodium, and potassium in the quantities mentioned. In milder states we may assume only 5% dehydration and give half the quantities recommended.

To proceed with our example, if our 2-year-old child, weighing 12 kg., with a surface area of 0.5 square meters, is admitted with diarrhea and severely dehydrated, we would use the rule of giving, per kilogram, 80 cc. of water, 6 mEq. of sodium, and 4 mEq. of potassium, and our figures for this 12 kg. child would be, for correction of dehydration, water, 960 cc.; sodium, 72 mEq.; and potassium, 48 mEq. To this we add the daily maintenance requirements based on a surface area of 0.5 square meters: water, 750 cc.; sodium, 15 mEq.; and potassium, 10 mEq. We thus arrive at a total of: water, 1,710; sodium, 87 mEq.; and potassium, 58 mEq.

At this point we must recall that we have already administered a certain volume of initial mix, namely, 30 cc. per kilogram, or in this case 360 cc. This initial mix contains, per liter, 75 mEq. of sodium, so that we have given 360 cc. of water containing 27 mEq. of sodium, and these figures must be subtracted from the total daily needs. The adjusted figure is then: water, 1,350; sodium, 60 mEq.; and potassium, 58 mEq. The figure 1,350 could be rounded off to 1,500, and so to prepare this solution one might take 1,500 cc. of 10% invert sugar, add 20 cc. of 3 M sodium chloride and 19 cc. of 3 M potassium chloride. In practice, however, since sugar solutions come in 500 cc. and 1,000 cc. sizes, we would use 1 liter of 10% invert sugar, to which we would add two-thirds of the electrolyte, this to be followed by a half-liter bottle containing one-third of the electrolyte, and all to run in over 24 hours.

This method of figuring, although perhaps appearing complicated at first, becomes remarkably simple with practice, has the virtue of being based on sound physiological principles, and has given us gratifying clinical results. A special advantage of this method of prescribing is that for each patient a mixture is prepared that is suited to his own needs, and this mixture is designed to provide for all his needs for a full 24 hour period. Other methods of therapy, which utilize ready-made sodium and potassium mixtures, are less easy to adapt to the needs of the individual patient and often involve changing solutions several times during the day. The objection may be raised that our extemporaneously prepared mixtures are always hypertonic, containing 10% sugar with added salt. This is true; yet in practice we have had no more difficulty with thrombophlebitis than we have seen with use of isotonic fluid.

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[4] Darrow, D. C., and Pratt, E. L.: Diarrhea, in Pediatrics, ed. 12, New York, Holt & McIntosh, 1953, p. 247.

PRECAUTIONS TO BE OBSERVED

The dangers of hyperpotassemia are well known. For this reason in giving potassium certain precautions must be observed. First, we withhold potassium until we are sure that the patient is voiding. Secondly, the daily allowance of potassium is made to run in slowly over the entire 24 hour period. In case the infusion stops and time is lost, we may have to speed up the rate of flow toward the end of the day, but in no case is the total daily allowance of potassium permitted to be absorbed in less than six hours. Finally, we withhold or postpone potassium therapy in patients with clinical evidence of disease known to predispose to hyperpotassemia. Such conditions are nephritis, lower nephron nephrosis, severe burns, extensive crushing injuries, and adrenocortical failure. With the foregoing exceptions, it will be found that patients tolerate large amounts of potassium provided it is given slowly and continuously over a 24 hour period. Butler [5] has found that the normal adult can tolerate up to 225 mEq. of potassium per square meter of body surface per day. Only in the exceptional cases such as those mentioned do we find it necessary to utilize the electrocardiogram or the flame photometer to detect evidence of excessive circulating potassium.

Certain special conditions may require modification of the routine outlined. One such is dehydration due to vomiting (as in pyloric stenosis), where alkalosis may be present. Here, in treating the dehydration our initial mix is better made without sodium lactate. Instead we use half-normal saline; that is, 1 liter of 5% glucose to which is added 75 mEq. of sodium chloride. Except for this modification our routine in alkalosis is the same as in dehydration with acidosis. Patients with severe burns constitute another special problem to which the present routine would not apply. Currently, we are using the program of fluid therapy outlined by Evans [6] for the management of severe burns. Patients with renal failure, as in so-called lower nephron nephrosis, also present a special problem, which is beyond the scope of the present paper.

In general, we believe that all patients maintained on parenterally administered fluid more than four or five days deserve special supervision. In these cases, although we continue to follow the outline of therapy presented, we prefer to check our therapy by determinations of serum chloride and bicarbonate levels every two or three days. We watch particularly for depression of serum chloride and elevation of serum bicarbonate level (hypochloremic alkalosis). Such signs would indicate hypopotassemia and the need for additional potassium therapy. In patients receiving prolonged intravenous therapy we also test the urine daily for acetone (since it is virtually impossible to provide adequate calories by the intravenous route) and for chloride, by the simple bedside quantitative test of Fantus.[7] If the urinary chloride level is less than 1 gm. per liter, we give additional sodium chloride.

Although these precautions need to be observed, it is noteworthy that, in the vast majority of our patients who have no renal disease and in whom therapy is continued only two to four days, we have simply adhered to the rules of therapy as outlined and have not found it necessary or even helpful to measure serum electrolyte levels. Dehydration, acidosis, and deficiencies of sodium, potassium, and chloride have corrected themselves promptly without clinical evidence of any inaccuracies in therapy.

It should be noted that everything already discussed refers to intravenous therapy only. It is our feeling that any patient who deserves parenteral therapy deserves intravenous therapy. The subcutaneous route does not permit the prescription of ideal mixtures of sugar and electrolyte or the proper control of their rates of absorption. With modern equipment, including special scalp vein needles,[8] one seldom has to resort to surgery to get a needle into a vein and hardly ever needs to be content with any less effective route for parenteral therapy. It might be added that the principles outlined here can perfectly well apply, without change, to adult patients as well as to children.

SUMMARY

For the conduct of intravenous fluid and electrolyte therapy in medical and surgical patients of the pediatric age group, we employ only five different solutions, i. e., 5% glucose, 10% invert sugar, 3 M sodium chloride, 3 M potassium chloride, and 1 M sodium lactate. For each patient, once each day, a proper mixture of these solutions is prepared to provide for all his needs for a 24 hour period. In prescribing these fluids we give the following amounts of fluid: (1) for daily maintenance, per square meter of body surface, 1,500 cc. of water, 30 mEq. of sodium chloride, and 20 mEq. of potassium chloride; (2) for replacement of current abnormal losses (diarrhea, vomiting, gastric suction, etc.), per liter of such fluid lost, 1,000 cc. of water, 135 mEq. of sodium chloride, and 15 mEq. of potassium chloride; (3) for correction of dehydration, assuming 10% weight loss through dehydration, per kilogram of body weight, 80 cc. of water, 6 mEq. of sodium chloride, and 4 mEq. of potassium chloride (for moderate dehydration, only half these quantities); and (4) for beginning therapy of dehydrated patients, a potassium free "initial mix" containing, per liter, 50 mEq. of sodium chloride and 25 mEq. of sodium lactate. Potassium is given only after renal function has been reestablished. Certain precautions must be observed in the application of these rules, particularly in regard to the dangers of potassium therapy.

3503 Prytania St.

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SURGICAL TREATMENT OF BRONCHIECTASIS IN CHILDREN

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A previous study[1] summarized the over-all results in a series of 221 patients of all ages who underwent surgical resection for bronchiectasis. The present study represents an evaluation of the 30 children, ranging in age from 5 to 14 years, included in that series. Fourteen of the patients were boys, and 16 were girls. Pulmonary resection was carried out in all instances, with the patient under general endotracheal anesthesia; a posterolateral incision was used, with individual ligation of hilar structures. All patients were operated on prior to December, 1952, and all were followed by direct observation of the child and by follow-up letter. Preoperative bronchoscopy was done in all cases, as were bronchograms. Pathological examination confirmed the clinical impression in all cases.

CLINICAL RESULTS

The clinical results in this series of 30 cases were good in 18 (60%), fair in 7 (23.3%), and poor in 4 (13.3%). No operative deaths occurred, but one patient died several months after operation as the result of progressive sepsis. A good result was one in which the patient was returned to full activity and had few or no remaining symptoms. A fair result indicated that some limitation of activity was present but that the residual symptoms were not incapacitating. A poor result designated either little improvement or worsening after operation. These results compared unfavorably with those obtained in the aforementioned series of 221 patients of all ages, in whom good results were noted in 75%, fair results in 16%, and poor results in 5%. The remaining 4% represented deaths. Bilateral resection was not done in this series of children. Two pneumonectomies were carried out. The remaining patients underwent unilateral resection. Table 1 summarizes the extent of pulmonary resection and the respective results.

COMPLICATIONS

The postoperative complications encountered were retention of secretion, pleural effusion requiring thoracentesis, bronchopleural fistula, and pneumothorax. Table 2 outlines the incidence of these complications. This presents a striking contrast to the incidence of complications seen in the series of patients of all ages, in which they occurred less than half as frequently. Retention of secretion requiring postoperative bronchoscopy occurred in 60% of these children. This is to be compared with an incidence of 25.8% in the larger series of 221 patients. We consider that this increase in postoperative retention of secretion in children is directly related to their failure to cough sufficiently after thoracotomy. Since this study, therefore, we have liberalized the indications for doing concomitant tracheotomy at the time of thoracotomy in order to mitigate retention of secretion and help prevent the bronchoscopy that such retention necessitates. It is our impression that the more frequent use of concomitant tracheotomy will serve to improve the postoperative course of these children and thereby enhance the possibility of good results.

TABLE 1.—*Extent of Operation Related to Results*

	Results			
Extent of Resection	Good	Fair	Poor	Dead (Late)
Pneumonectomy	1	0	0	1
Unilateral, 1 lobe	7	3	1	..
Unilateral, 2 lobes	10	4	3	..

TABLE 2.—*Complications of Pulmonary Resection in Thirty Cases*

	Cases	
Complication	No.	%
Retention of secretion	18	60.0
Pleural effusion	3	10.0
Bronchopleural fistula	2	6.6
Pneumothorax	1	3.3

NEW BRONCHIECTASIS

Documented new bronchiectasis was found after operation in 5 of the 30 children (16.6%). This is doubtlessly a minimal figure, since postoperative bronchograms were done on only 13 patients. In addition, two patients had proved progression of residual disease. Unsatisfactory results were observed in all of these seven patients with new or progressive bronchiectasis. As compared with the previously mentioned study, this shows increased tendency toward formation of new and progressive bronchiectasis in children and further explains the poorer results in their treatment by pulmonary resection.

RESIDUAL BRONCHIECTASIS

All pulmonary tissue involved with bronchiectasis was resected in 16 of the 30 patients in this series; 11 (69%) of this group obtained good results. The remaining 14 patients manifested some residual disease; 7 (50%) of this group obtained good results. Only one of three patients with ipsilateral residual disease had good results. We believe these figures, though small in number, show a trend associating residual disease with poorer results.

COMMENT

It was disappointing to find that the results after surgical treatment of bronchiectasis in children were not so good as the results in a series that included patients of all age groups. Certain factors appear to be implicated. A definite increase in the incidence of postoperative complications, particularly retention of secretion, was noted in children. These young patients also showed an increased tendency for postoperative development of new bronchiectasis, a particularly serious complication in children. It appears to us that the afore-mentioned factors play an important role in determining the results of surgical treatment of bronchiectasis in children. Also, possibly incomplete development or increased susceptibility to infection contribute to the different results obtained in treatment of this disease in children and adults.

From the Mayo Clinic and the Mayo Foundation. The Mayo Foundation is a part of the graduate school of the University of Minnesota.

[1] Ginsberg, R. L., and others: Prognosis of Bronchiectasis After Surgical-Resection, Surg., Gynec. & Obst., to be published.

were all relieved at variable intervals after administration of glyceryl trinitrate. On one occasion, the blood specimen obtained about an hour after the attack of angina (four hours after meal) showed a drop in the plasma lactescence level.

The solid line in figure 2 represents a curve of the average plasma lactescence values following test meals in the 13 remaining patients with severe coronary artery disease and angina pectoris. This curve shows a gradual rise of the turbidity level to its peak about five hours after fat ingestion, which is considerably later than that of the patient with hyperlipemia presented in figure 1. Without exception, the individual plasma lactescence curves of these 13 patients follow the composite curve very closely. Interestingly enough, each of the 10 attacks of angina pectoris observed in this group of patients was found to occur about four and one-half to five hours after the fat meal, while plasma lactescence was at or near its peak value.

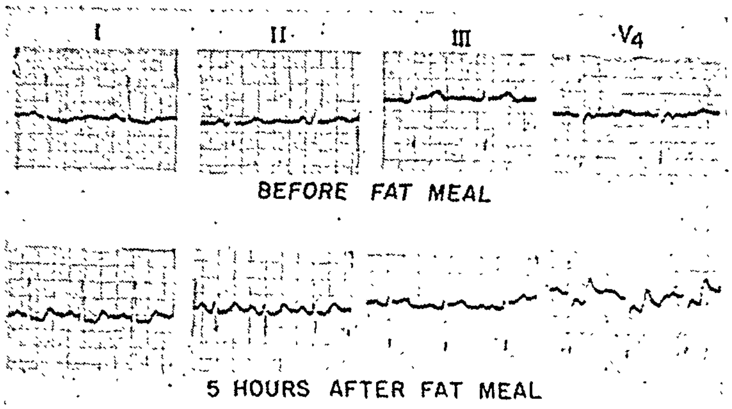

Fig. 3.—Electrocardiograms obtained in patient with coronary artery disease before and after fat meal. The lower tracing was taken while the patient was having anginal pain.

The dotted line in figure 2 is a curve of the average plasma turbidity values, following the ingestion of nonfat meals, obtained from three of the six patients who had previously developed anginal pain with a fatty meal. The curve is low and remains essentially flat throughout the period of study. No anginal pain was elicited in any of the three patients after the ingestion of the nonfat meal.

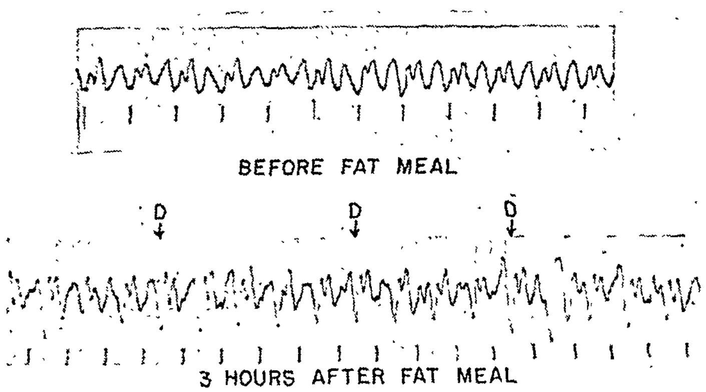

Fig. 4.—Ballistocardiograms obtained from patient with idiopathic hyperlipemia and coronary artery disease. "D" in the lower tracing indicates the appearance of a larger V-shaped early diastolic wave with the onset of angina pectoris. Markers denote R waves in electrocardiogram.

Effects of Fat Meal on Electrocardiogram.—The control electrocardiograms of all except one of this series of patients were abnormal. None of the patients showed a significant change in the electrocardiogram sooner than three hours after the meal. With the onset of angina pectoris, three to five hours after fat ingestion, definite changes in the electrocardiogram were noted in four of these patients. These changes were transitory, disappearing promptly with the subsidence of anginal pain. An increase in cardiac rate, an increased depression of the already depressed RS-T segment of more than 0.50 mm., and a shift in the amplitude of the T waves were found in three of these four patients. A lowering of the amplitude of the T waves was recorded in two patients together with the RS-T segment depression. The T wave in a 54-year-old female with hypertension and severe coronary artery disease became more upright in the limb and chest leads, while the RS-T segment was markedly depressed during the attack. Her control and five-hour postprandial tracings are shown in figure 3. The remaining patient showing electrocardiographic changes developed frequent ventricular extrasystoles soon after the onset of chest pain four and one-half hours after the meal but showed no distinct alteration in the RS-T segments in the electrocardiogram.

Effect of Fat Meal on Ballistocardiogram.—Twelve of the 14 patients in this series have very abnormal ballistocardiograms. No distinct change from the control tracing could be detected in any of the patients before the onset of anginal pain, three to five hours after the ingestion of a fat meal. In six patients, extremely marked changes in the ballistocardiogram were observed during each of the 14 attacks of angina thought to be precipitated by the fat meal; of these patients, evidence of gallbladder disease was found in only one. The abnormal ballistic changes were found to persist the duration of the anginal attack; the record would gradually return to the control pattern 10 to 15 minutes after the patient was free of pain. Figure 4 shows ballistocardiograms of a patient with hyperlipemia, coronary artery disease, and congestive failure made before and three hours after the fat meal with the development of angina. The control ballistocardiogram before the fat meal is markedly abnormal, with a short I wave, wide and notched J wave, and prominent diastolic waves. The tracing taken immediately after the appearance of chest pain, three hours after the fat meal, shows a completely different ballistocardiographic pattern. Besides the prominent respiratory variations, the amplitudes of the diastolic waves (D) are greatly exaggerated and in-

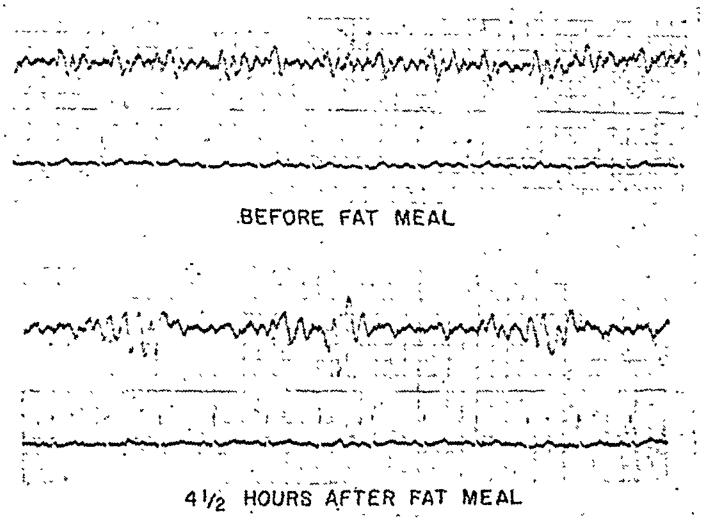

Fig. 5.—Ballistocardiograms obtained from patient who developed angina pectoris.

terfere with the inscription of the systolic ballistic complexes. The patient was quite dyspneic at this time, and a prominent diastolic gallop, probably of the summation type, became audible and palpable at the cardiac apex.

Another example of the ballistocardiographic changes induced by the fat meal is shown in figure 5. These tracings were obtained from a 58-year-old female with coronary artery disease with old myocardial infarction and angina pectoris. Her control ballistocardiogram (fig. 5, top) shows grossly abnormal ballistic complexes with prominent respiratory variations in the amplitudes of systolic ballistic complexes. The record reproduced in figure 5, bottom, was made during one of her attacks of anginal pain four and one-half hours after taking the fat meal. The respiratory variations in the ballistocardiographic complexes have become greatly exaggerated. Furthermore, the over-all amplitude of many of the systolic complexes is markedly decreased. Hence, during expiration, one has great difficulty in identifying the systolic ballistic complexes. The large irregular groups of vibratory waves are produced by exaggerated respiratory movements because: (1) at the time of recording, these waves were found to correspond to heavy breathing the patient was exhibiting at that time, (2) the vibrations did not have a constant relationship with the QRS complexes in the electrocardiogram, and (3) they disappeared when the patient held her breath in any phase of respiration.

The series of tracings shown in figure 6 taken in a patient with hypertension and severe coronary artery disease give another example of the abnormal ballistic waves. The systolic ballistic complexes in the control record of this patient (fig. 6, top) appear to be fairly distinct and regular, although they may be a little low in amplitude. The diastolic waves are relatively small throughout. The tracings became grossly abnormal five hours after fat ingestion, several minutes after the onset of substernal distress. The ballistocardiogram became totally disorganized at this time, and it was impossible to identify any of the systolic ballistic complexes. During the test, we observed that most of the body movements were actually caused by exaggerated breathing. The bottom tracing was made while the patient was asked to hold her breath momentarily. This promptly eliminated a large number of the extraneous waves and permitted proper identification of the ballistic complexes. Analysis of the ballistocardiogram as shown in figure 6, bottom, indicates that during angina pectoris, in addition to the greatly increased respiratory movements, the following changes appeared: 1. The H waves became more prominent than before the attacks. 2. A large, roughly V-shaped, mainly footward wave (D) appeared in mid-diastole. Although this V-shaped wave did not approach the size of the diastolic wave shown in figure 4, bottom, they appeared to be quite similar in most respects.

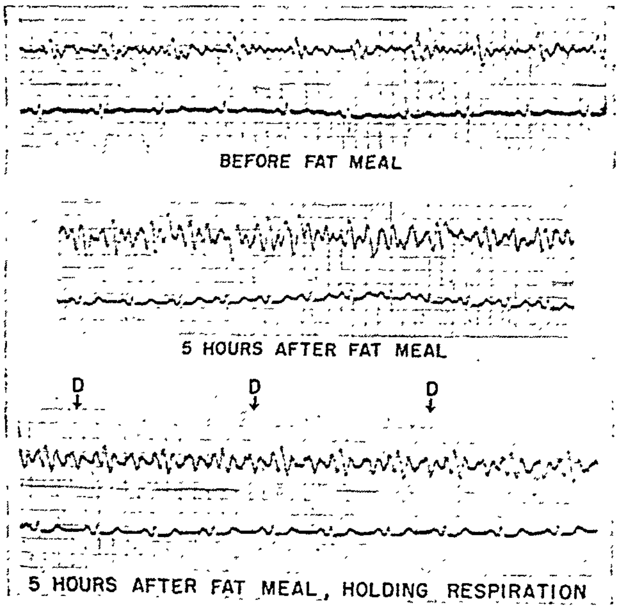

Fig. 6.—Ballistocardiograms of patient with coronary artery disease. The two lower tracings were recorded while the patient was having anginal pain. "D" in bottom tracing indicates the appearance of a V-shaped wave in diastole.

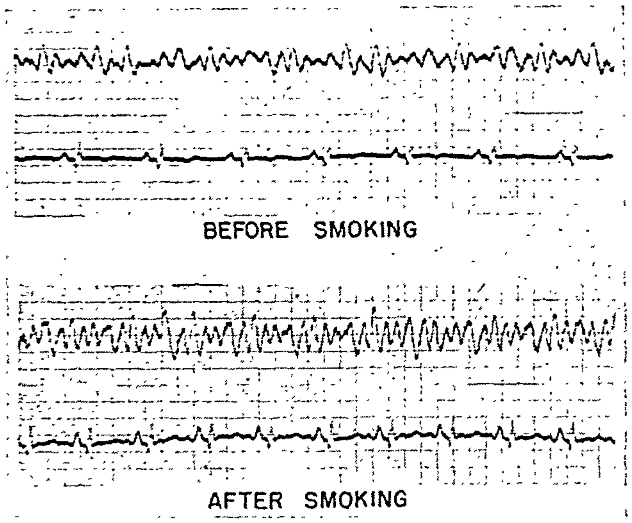

Fig. 7.—Ballistocardiograms of patient with coronary artery disease and healed myocardial infarction before and after smoking a standard brand cigarette.

Effect of Smoking on Ballistocardiogram.—A cigarette test was performed on 11 of these 14 patients, and a positive test consisting of a definite deterioration of the systolic ballistic complexes was obtained in 3 patients. An example of a positive cigarette test is shown in figure 7. The ballistocardiograms were made in a 62-year-old Negro with coronary artery disease and healed myocardial infarction before and after smoking one standard brand cigarette. None of the 11 patients developed typical anginal attacks after smoking.

COMMENT

The well-known clinical observation that patients with coronary artery disease tend to have exaggeration of symptoms shortly after a meal has been studied by a number of investigators.[3] It has been the opinion of most authors that the increased incidence of anginal pain after meals is probably due to an increase in cardiac work or to reflex constriction of coronary arteries as a result of gasenopathy and splenomegaly persisted for two to three weeks in the majority of cases. In none of these patients was jaundice observed.

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[3] (*a*) Berman, B.: Electrocardiographic Changes Following Meals in Patients with Angina Pectoris, J. Lab. & Clin. Med. 33: 1501 (Nov.) 1948. (*b*) Simonson, E., and McKinlay, C. A.: The Meal Test in Clinical Electrocardiography, Circulation 1: 1006-1016 (April) 1950. (*c*) Berman, B.; Braunstein, J. R., and McGuire, J.: The Effect of Meals on the Electrocardiogram and the Ballistocardiogram in Patients with Angina Pectoris, *ibid.* 1: 1017-1025 (April) 1950.

An initial throat culture was obtained on all cases. Beta hemolytic streptococci were isolated in 14 (32.6%) and pneumococci in 24 (55.8%) of the cases. During the period of hospitalization, laboratory studies were performed at 7 to 10 day intervals. These included total white blood cell count and differential count; tests of one minute and total serum bilirubin, cephalin-cholesterol flocculation, thymol turbidity, bromsulphalein retention, sedimentation rate (Wintrobe), and heterophil antibody agglutination. In 22 cases the initial white blood cell count was 12,000 per cubic millimeter or greater. The initial differential counts were normal or showed an increase in neutrophils in 41 cases. In two cases there was an initial lymphocytosis of 50% or greater. After the patients' recovery from the upper respiratory infection, the total white blood cell count decreased to within a range of 5,000 to 11,000 per cubic millimeter, and in 22 cases a lymphocytosis of 50% or more developed. In seven cases there were 5 to 17% virocytes seen in the peripheral blood smear. In all cases the total serum bilirubin level was less than 1.5 mg. per 100 cc. Eleven patients had one or more abnormal liver function studies. Of the remaining 32 patients, liver function studies, which in 23 cases included three or more different tests, were normal. Heterophil antibody agglutinations were obtained in every case at least every 10 days during the period of hospitalization. In 39 cases the heterophil titer was either negative or positive in a dilution of 1:28 or less. In four cases the heterophil titer was initially positive in a dilution of 1:56 but decreased under further observation. In no case was a rise of heterophil antibody titer observed.

TABLE 1.—*Symptoms of Hepatitis in Forty-Three Patients*

	Patients	
	No.	%
Upper respiratory infection	41	95.3
Sudden onset	32	74.4
Gradual onset	9	20.9
Pain in epigastrium or liver area	41	95.3
Fatigue or malaise	39	90.7
Anorexia	31	72.1
Nausea	12	27.9

TABLE 2.—*Signs of Hepatitis in Forty-Three Patients*

	Patients	
	No.	%
Initial temperature 100 F or over	34	79.7
Initial pharyngitis or tonsillitis	41	95.3
Hepatomegaly	40	93.0
Tender liver	43	100.0
Lymphadenopathy	23	53.5
Splenomegaly	22	51.2

Pneumonia was present in two patients on initial examination. There was one case of bronchopneumonia, due to pneumococcus, and one case of diffuse patchy pneumonitis of unknown etiology. In one patient, during convalescence from hepatitis, appendicitis developed and an appendectomy was performed. All three of these patients made a complete recovery without any evidence of residual effects.

The initial upper respiratory infection was treated with intramuscular injections of procaine penicillin in 39 cases, oxytetracycline in 2 cases, and no antibiotic in 2 cases. After diagnosis of hepatitis, all patients were treated with bed rest and allowed bathroom privileges after the acute phase of their illness. A high-protein, high-carbohydrate diet with supplemental vitamins was given. Those patients with anorexia or nausea received glucose parenterally until the return of appetite.

The hospital stay of these 43 patients ranged from 18 to 155 days, with a median period of hospitalization of 28 days. The patients were considered to have recovered and were discharged from the hospital when they were asymptomatic concerning appetite and liver tenderness to fist percussion and when the sedimentation rate and any abnormal liver function studies had returned to normal. These men were placed on a regimen of restricted physical activity for varying periods of time, until they regained their strength and sense of well-being. Two patients required rehospitalization because of recurrence of anorexia, nausea, and pain in the liver area. One of these patients was rehospitalized two weeks after discharge from the hospital and the other one week after discharge; both subsequently made a complete recovery. At the time of discharge, 18 patients had a palpable liver, and 4 of these had a palpable spleen. Fourteen of these patients were followed on an outpatient basis for one to three months, and all abnormalities had disappeared at the end of the follow-up period except in two men who have nontender, palpable livers and normal liver function studies at the time of preparation of this paper. Four patients were not seen after release from the hospital.

TABLE 3.—*Laboratory Findings in Forty-Three Patients*

	Patients	
	No.	%
Initial white blood cell count over 12,000 per cu. mm.	22	51.2
Lymphocytosis, over 50% in 2nd and 3rd week	22	51.2
Total serum bilirubin level over 1.5 mg. per 100 cc.	0	0
Cephalin-cholesterol flocculation 3+ reaction or greater at 24 or 48 hr. (performed in 38 cases)	7	18.4
Thymol turbidity 4 units per 100 cc. or greater (performed in 25 cases)	4	16.0
Bromsulphalein retention over 5% at end of 45 min. (performed in 35 cases)	6	17.1
Heterophil antibody titer greater than 1:56 dilution	0	0
Sedimentation rate (Wintrobe) over 10 mm. in 1 hr.	23	53.5

COMMENT

Anicteric cases of hepatitis have been repeatedly recognized in epidemics of infectious hepatitis.[2] The importance of such cases in the epidemiology of infectious hepatitis has been pointed out, and the possibility of chronic liver disease developing in unrecognized cases has been mentioned.[2c] Since sporadic cases of icteric hepatitis occur, it has been postulated that sporadic cases of anicteric-type hepatitis may also occur. In reviewing the English language literature, three reports of such cases occurring in adults have been found; one of 9 cases, one of 30 cases, and a third report of 4 cases.

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[2] (*a*) Barker, M. H.; Capps, R. B., and Allen, F. W.: Acute Infectious Hepatitis in the Mediterranean Theater, Including Acute Hepatitis Without Jaundice, J. A. M. A. **128**: 997-1003 (Aug. 4) 1945. (*b*) Finks, R. M., and Blumberg, R. W.: Epidemic Hepatitis With and Without Jaundice: Some Clinical Studies on 255 Patients Among Troops in a Combat Zone, Arch. Int. Med. **76**: 102-113 (Aug.) 1945. (*c*) Zimmerman, H. J.; Lowry, C. F.; Uyeyama, K., and Reiser, R.: Infectious Hepatitis: Clinical and Laboratory Features of 295 Cases, Am. J. M. Sc. **213**: 395-409 (April) 1947.

Reports of Anicteric Hepatitis.—In the report by Zimmerman and Thomas [1a] eight of the nine patients had an acute onset, and three had mild sore throats initially. Epigastric and right upper quadrant pain was a common complaint in these patients and, in contrast to the patients presented here, they complained of flatulence. All nine patients had a palpable and tender liver or "queasiness" in the right upper quadrant and had either cervical or generalized lymphadenopathy. The white blood cell count ranged from low to normal, and two patients had a lymphocytosis of 44% and 50% respectively. Three patients had 5% eosinophilia or greater. Urinary urobilinogen was increased, and the bromsulphalein retention was abnormal in all cases. Thymol turbidity and cephalin-cholesterol flocculation tests were abnormal in four and five cases respectively. The heterophil antibody agglutination test was negative in the four cases in which it was performed. The authors noted that liver enlargement persisted after lysis of the fever. Of the eight patients who were followed after the first week, four recovered completely within three to eight weeks. One was asymptomatic after 3 weeks but continued to have abnormal liver function studies for 10 weeks, and three had persistent abnormalities for over 4 months.

Denber and Leibowitz [1b] observed 30 sporadic cases of anicteric hepatitis over a one and one-half year period. The most common symptoms in their cases were persistent fatigue, anorexia, distaste for smoking, abdominal pain, headache, and nausea. Thirty-three per cent of these patients complained initially of sore throat, and 23% had signs of pharyngeal inflammation. The liver was palpable in 56%, tender in 79%, and both palpable and tender in 51% of the cases. There was splenomegaly in 27% of the cases, and in 56% there was either generalized or cervical lymphadenopathy. Virocytes were noted in 16 of 26 cases but did not number over 10% of the total number of cells. These cells were identical with Downey cells. The thymol turbidity in these 30 patients was abnormal in all cases, and the cephalin flocculation was abnormal in 86%. The total serum bilirubin level was slightly increased to 1.2 to 1.9 mg. per 100 cc. in 25% of the cases. All patients recovered within 10 days to 4 months, except one patient with a chronically active case who, it was suspected, may have had serum hepatitis. In 28 of the cases heterophil agglutinations were performed, and in 6 the heterophil was positive in a dilution over 1: 56 but was not of diagnostic titer after absorption studies.

Domenici [1c] reported four cases of hepatitis without jaundice or hepatomegaly. His cases undoubtedly represent some type of parenchymal liver disease, probably viral in origin; however, they differ from the cases reported here, from those reported by Zimmerman and Thomas, and from those of Denber and Leibowitz. Abnormal findings in his cases were tenderness to percussion over the liver area and tenderness in the right upper quadrant. The liver function studies were intermittently abnormal throughout the course of the disease. The illness in these four cases was prolonged with psychological disturbances and lasted from four to six months.

Initially, the patients presented here had symptoms of an upper respiratory infection. This responded well to antibiotic treatment, and the patients became asymptomatic in this regard. In the majority of cases it was not until after the upper respiratory infection had been cured and the temperature had decreased to normal that the symptoms of liver disturbance became prominent. In contrast to the previously recognized cases of acute anicteric hepatitis, only a few of the patients presented here showed evidence by laboratory studies of liver dysfunction; however, in all cases, there were definite signs and symptoms of inflammation of the liver, frequently accompanied by other evidence of generalized disease.

Etiology.—At the present time the etiological agent of this illness is unknown. Three possibilities as regards etiology have been considered. These cases could represent an immune response of the liver to an acute infection, a viral hepatitis related to either the infectious or the serum hepatitides, or a disease related to infectious mononucleosis. The incidence of presenting upper respiratory infections is very high in this group of cases and considerably higher than that reported in the three other studies of sporadic anicteric hepatitis. It is known that the liver may become enlarged and tender after acute infections.[3] It has been stated that inflammatory changes in the liver may occur after sore throats and other acute infections as a tissue immune reaction, similar to that occurring in the kidneys in acute nephritis.[4] In such cases these abnormalities are usually transient, and persistence for 10 to 14 days is considered evidence of primary liver disease.[3] That the illness presented here is a response of the liver to acute infection is unlikely, since in 17 cases the onset of the upper respiratory infection and the evidence of liver disease appeared simultaneously, and in all cases the evidence of liver abnormalities persisted for at least two weeks. Instead, it seems most likely that the prodromal stage of this illness may predispose to upper respiratory infections.

In the other reports of anicteric hepatitis the authors have postulated that a virus was responsible for the illness.[5] In view of the normal or slightly low white blood cell count, the lymphocytosis, and the appearance of virocytes in some of the patients during the course of their hepatitis and after the disappearance of the upper respiratory infection, it would seem likely that these cases also represent a virus disease. Except for the lack of abnormal liver function studies and high incidence of preceding upper respiratory infections, these cases closely resemble the anicteric cases accompanying epidemics of infectious hepatitis.[2] In addition, cases of anicteric hepatitis similar to the cases presented here have been produced in human volunteers by the administration of material known to contain the virus of either infectious or

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4. Cecil, R. L., and Loeb, R. F.: A Textbook of Medicine, ed. 8, Philadelphia, W. B. Saunders Company, 1951, pp. 761-764.

5. Zimmerman and Thomas.[1a] Denber and Leibowitz.[1b]

6. Neefe, J. R.; Stokes, J., Jr.; Reinhold, J. G., and Lukens, F. D. W.: Hepatitis Due to the Injection of Homologous Blood Products in Human Volunteers, J. Clin. Invest. **23**: 836-855 (Sept.) 1944. Neefe, J. R.; Stokes, J., Jr., and Gellis, S. S.: Homologous Serum Hepatitis and Infectious (Epidemic) Hepatitis: Experimental Study of Immunity and Cross Immunity in Volunteers: Preliminary Report, Am. J. M. Sc. **210**: 561-575 (Nov.) 1945.

serum hepatitis.[6] Anicteric hepatitis also occurs when infectious hepatitis is attenuated with gamma globulin,[7] and such cases also closely resemble those presented here. Thus, this disease may be a mild or attenuated form of infectious hepatitis.

The possibility that these cases may be a mild form of serum hepatitis has also been considered. Fifty-eight per cent of these patients had less than six months of military service and had had some type of vaccine administered parenterally at the time of entry into service; however, during the period of observation 10 cases of infectious hepatitis with jaundice were encountered, while there were no proved cases of serum hepatitis. The acute onset of the illness as well as the lack of any confirmed common icterogenic source of infection also is against this likelihood.

The greatest difficulty was in differentiating this syndrome from infectious mononucleosis. During the period of observation, 24 proved typical cases of infectious mononucleosis were encountered. In the majority of those cases there were abnormal liver function studies. The diagnosis of infectious mononucleosis was not confirmed in the cases presented here, despite the clinical similarity, because of the low percentage and lack of persistence of virocytes in the differential smear, plus the lack of a positive heterophil agglutination titer despite repeated examinations.[8] The possibility that these cases represent an atypical seronegative form of infectious mononucleosis has been considered. This question cannot be resolved until a specific diagnostic test for the etiological agent of both infectious hepatitis and infectious mononucleosis is developed.

Unless one considered the possibility of liver disease, these cases might easily have been misdiagnosed as unusual upper respiratory infections or as influenza. It is important that these cases be correctly diagnosed. They will help clarify the epidemiology of hepatitis as more specific tests are developed. In addition, because this illness may represent a type of infectious hepatitis, cases should be recognized so that the patients may be temporarily eliminated from the role of blood donors. The duration of the carrier state in infectious hepatitis has been shown in some cases to last for years.[9] With the ever-increasing popularity of the parenteral administration of blood derivatives, all possible icterogenic sources must be eliminated if a continual pyramiding of cases of homologous serum hepatitis is to be prevented.

Sequelae.—In addition, the possible long-term sequelae of this illness are still in doubt. There is a large body of evidence that points to viral hepatitis as a factor in the pathogenesis of chronic liver disease,[10] especially as alcoholism assumes a minor role in certain areas.[11] Many patients with cirrhosis have no history of jaundice,[12] which leads to speculation on the importance of anicteric attacks of hepatitis at the onset of the disease.[9] Despite the apparent benignity of the disease in this conservatively treated series, there were two patients who had evidence of activity four months from the onset, placing their disease in the chronic active phase as characterized by Barker.[10a] Both of these patients completely recovered; however, it should be pointed out that all of the cases presented here were in healthy young men who were placed on a regimen of limited activity for as long as necessary. In civilian populations with an older age group, or where continued exposure of the liver to other insults may occur during the disease, a complete recovery may not be the rule.

SUMMARY

The 43 patients with anicteric hepatitis associated with upper respiratory infections reported on showed typical symptoms and signs of parenchymal liver disease; however, only a minority of the patients presented any laboratory evidence of liver dysfunction. It is probable that these cases represent a virus disease related either to infectious hepatitis or to infectious mononucleosis. These patients were treated in the usual manner, with bed rest; high-caloric, high-protein diet; and glucose administered parenterally, when indicated. All patients responded well to treatment, and follow-up to complete recovery was accomplished in a majority of cases. The importance of these cases is emphasized in reference to the epidemiology of hepatitis, elimination of patients with this disease as potential blood donors, and the possible antecedence of this illness to chronic liver disease.

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Common Sense in Cancer.—Surgical attacks on highly malignant tumors, like trauma to streptococcal infections, may do more harm than good. They break the natural barriers. They spread the disease. When we remember that the blood and lymphatic vessels of highly malignant tumors are filled with tumor cells, it is clear that it is not often possible to excise such tumors completely. They have extended diffusely into the tissue spaces. They are systemic diseases. . . . Not all cancers are as virulent as hemolytic streptococci. Some are like staphylococci—locally destructive, tending to remain in one area. These cancers are like abscesses. They are amenable to surgical treatment. Squamous cell cancers, papillary cancers of the thyroid, and many of the cancers of the colon are biologically predetermined to remain localized for long periods and to metastasize chiefly to the regional lymph nodes. Many of them can be controlled by adequate excision of the primary tumor and its zone of lymphatic metastasis. The people who consider surgical attack harmful are wrong about these tumors. Most of them are curable. The public does not distinguish between various types of cancer. They lump cancers together under one name. That is why the cancer problem is not understood. But if we are to settle the confusion in the mind of the public, we must first settle the confusion in our own minds. We must study the natural history of cancers.—G. Crile Jr., M.D., Common Sense in Cancer, *Postgraduate Medicine*, April, 1955.

PARADOXICAL ACTION OF GLYCERYL TRINITRATE (NITROGLYCERIN) IN CORONARY PATIENTS

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For more than 75 years, no drug has proved superior to glyceryl trinitrate (nitroglycerin) in warding off or cutting short attacks of angina pectoris. Most observers have attributed the beneficial action of this agent to its vasodilating effect on the coronary arteries. On the other hand, while favorable therapeutic response in most patients is an established fact, clinical experience has proved that, in certain cases, the use of nitrites is not followed by clinical improvement [1] and may even cause untoward effects. A considerable number of reports in the literature make it clear that glyceryl trinitrate is not a perfectly harmless drug and that there exists a significant incidence of collapse, syncope, and less severe reactions of cardiovascular nature after its administration.[2] Usually such reactions are ascribed either to overdosage or to an individual sensitivity of the patient. The causes of such reactions are readily discernible, however, if one considers the pharmacological actions of this drug on the whole of the cardiovascular system rather than on the coronary circulation alone. Experimental work has shown that nitrites produce a general vasodilatation that is most marked in the postarteriolar vascular bed. Weiss and associates [2d] have demonstrated that capillaries and venules are strongly dilated by administration of sodium nitrite which causes a diminution in the tone of the venous reservoir, diminished venous return to the heart, and peripheral circulatory collapse. Little information is available about the effect of the nitrites on the output and work of the human heart. Wegria and associates,[3] in recent studies made with a low-frequency ballistocardiograph, concluded that cardiac work per beat and per minute is increased by glyceryl trinitrate. Their findings suggest that glyceryl trinitrate relieves the anginal pain of myocardial ischemia by increasing the coronary flow relatively more than the work of the heart. Brandt and associates,[4] however, using the slit-kymograph have offered strong evidence that glyceryl trinitrate decreases heart volume and stroke volume. As a result of increase in heart rate the net effect on minute volume flow is insignificant in most subjects but may result in a rise of 30% in subjects whose rates are markedly accelerated. The fact that the decrease in stroke volume was more marked in erect than in recumbent subjects gave confirmation to the findings of Weiss and associates [2d] that the decrease is due primarily to venous pooling and reduced return to the heart. Inasmuch as any disturbance in cardiac function due to poor venous return appears to aggravate angina, it must be assumed that glyceryl trinitrate is effective in spite of its action in decreasing cardiac filling.[4] Moreover, since glyceryl trinitrate has little effect on cardiac work per minute, its favorable action in angina pectoris must result from better flow through the larger coronary collateral arteries. The view of Raab [5] that glyceryl trinitrate may act in a different manner, namely, by interfering with the metabolic, anoxia-producing effects of the sympathomimetic amines on the myocardium, has not been confirmed by other investigators.[6] It would appear therefore that glyceryl trinitrate exerts specific effects on coronary blood flow, venous return to the heart, stroke volume, peripheral resistance, cardiac rate, and blood pressure. Although occasionally some of these changes in the vascular system are so pronounced that they are found to vitiate or overbalance the effect of coronary vasodilatation (either by decreasing coronary flow or by increasing the work of the heart), they are usually of such mild degree or so well compensated for by reflex mechanisms that the over-all effect is beneficial for the coronary circulation. When the reflex changes compensating for peripheral venous stasis induced by glyceryl trinitrate fail, however, circulatory collapse and syncope may ensue. Reports of less apparent untoward phenomena of cardiovascular nature following nitrite administration have been few. Dewar and Grimson [2g] observed a case of angina pectoris in which glyceryl trinitrate actually induced pain and produced depression of the S-T segments at rest comparable to the S-T segment depression caused by exercise. No explanation for this phenomenon was offered. Electro-

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This was a joint project with the National Heart Institute, United States Public Health Service, Washington, D. C.

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cardiographic changes after inhalation of amyl nitrite have been reported in the literature by various authors. Goldberger [7] attributes them to rotation of the heart resulting from its decrease in size and contends that similar, if not identical, findings are produced by deep inspiration. Nordenfelt [8] considers the alterations in the electrocardiogram after inhalation of amyl nitrite to be similar to those occurring in the change from the supine to the erect position. Contro and associates,[2h] on the other hand, found that amyl nitrite inhalation often produced electrocardiographic changes that were similar to those obtained with an exercise test in the same patients. They suggest that, in spite of coronary vasodilatation, the tachycardia and fall in blood pressure induced by the drug may result, paradoxically, in myocardial ischemia. The purpose of the present report is to record a series of cases in which untoward effects from glyceryl trinitrate were observed on electrocardiographic tracings and to attempt an explanation of the mechanism involved.

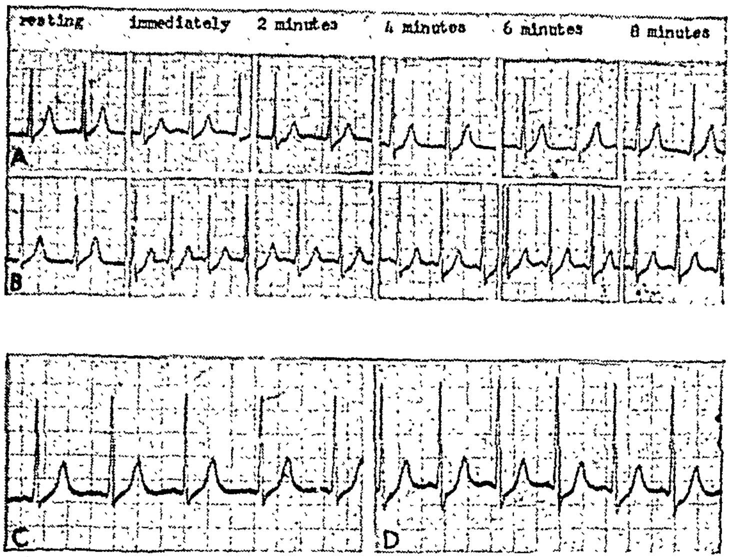

Fig. 1 (case 1).—Master tests (lead V_4) showing *A*, control response and *B*, response after premedication with glyceryl trinitrate. Note more abnormal response in *B*. *C* and *D*, resting electrocardiogram (lead V_4) with patient recumbent: *C*, before glyceryl trinitrate and *D*, five minutes after 0.4 mg. (1/150 grain) of glyceryl trinitrate sublingually.

METHOD

The modifying effect of varying doses of glyceryl trinitrate (0.2 to 1.2 mg. [1/300 to 1/50 grain]) upon the electrocardiographic response to standard exercise was studied in 158 patients with coronary disease who showed consistently abnormal responses in control tests. Of this number, 154 were men between the ages of 32 and 77 years and 4 were women, 48, 51, 56, and 62 years respectively. Twenty-two of the total had suffered a clinical episode of acute myocardial infarction previously, while 51 presented classic symptoms of angina pectoris at the time of study. Arterial hypertension was present in about 40% of the patients. In all instances a hypodermic tablet of glyceryl trinitrate in varying dosage was administered sublingually five minutes before commencement of the Master two-step test, after which the results were compared with those obtained in control studies without prior medication. In subjects in whom such comparison indicated a paradoxical response to glyceryl trinitrate, careful study was made of the effect of the drug on the resting electrocardiogram.

RESULTS

With a dose of 0.4 mg. (1/150 grain) administered sublingually five minutes prior to exercise, 105 patients showed a completely normal response, 26 an improved response, 11 no significant change, and 16 patients even greater abnormalities than were observed in control tracings. Among the 131 patients responding favorably to 0.4 mg., there were 16 who showed less dramatic results or a paradoxical response when larger doses were employed (0.6 to 1.2 mg. [1/100 to 1/50 grain]). On the other hand, the majority of these patients responded as well to 0.2 or 0.3 mg. (1/300 or 1/200 grain) as they did to 0.4 mg. (1/150 grain). Five of the 11 patients who showed no significant change with 0.4 mg responded favorably to larger doses of this drug. It therefore became apparent that individualization of dosage is an important prerequisite to rational therapy in angina pectoris. Moreover, even in the patients who showed a paradoxical response to ordinary doses of glyceryl trinitrate, adverse effects did not appear with smaller amounts of the drug. The following cases are representative of the 16 patients who showed paradoxical response to 0.4 mg. of glyceryl trinitrate.

REPORT OF CASES

CASE 1.—A 56-year-old white male who had suffered an attack of myocardial infarction in 1947 presented no complaints referable to the cardiovascular system. The 12-lead standard electrocardiogram was consistent with the diagnosis of an old posterior myocardial infarct. In studying the effect of exercise on the electrocardiogram (with and without premedication with glyceryl trinitrate) it was observed that the S-T segment depression induced by effort was of greater magnitude and duration when this drug had been employed. It can be seen in figure 1*A* and *B* that the administration of glyceryl trinitrate (0.4 mg.) five minutes before the performance of the exercise test resulted in a more abnormal electrocardiographic response than that observed in the control study without such medication. This unexpected and apparently paradoxical response prompted us to study the effect of a similar dose of glyceryl trinitrate on the patient's resting electrocardiogram. Figure 1*C* and *D* shows that the administration of this drug with the patient in the recumbent position resulted in S-T segment depression of even greater magnitude than that produced by exercise alone (fig. 1*A*). This abnormality gradually disappeared within the next 12 minutes, while the blood pressure fell from a control value of 142 mm. Hg systolic and 90 mm. Hg diastolic to 108 systolic and 80 diastolic 9 minutes after the administration of glyceryl trinitrate (table 1). The heart rate increased from a control value of 94 to 120 beats per minute in 5 minutes then gradually fell to the control level again in 15 minutes (table 1). The administration of glyceryl trinitrate to this patient even in a dose as small as 0.2 mg. consistently produced symptoms of dizziness, headache, and nausea while he was in the upright position. Reclining promptly relieved the patient of his symptoms.

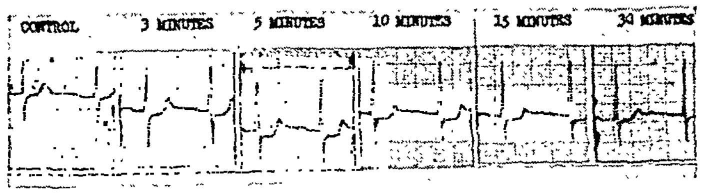

Fig. 2 (case 2).—Effect of 0.4 mg. (1/150 grain) of glyceryl trinitrate on resting electrocardiogram (V_4). Depression of the S-T segment persisted up to 30 minutes.

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Case 2.—A 67-year-old white male had suffered from angina pectoris for approximately four years. More recently he noted that the attacks had become more severe and were more easily induced by effort or excitement. The standard 12-lead electrocardiogram with the patient recumbent showed slight depression of the precordial S-T segments. This depression became marked in lead V_4 5 minutes after administration of glyceryl trinitrate (0.4 mg.) and persisted up to 30 minutes (fig. 2). The blood pressure dropped from a control level of 120 mm. Hg systolic and 70 mm. Hg diastolic, before administration of the drug, to a low of 98 systolic and 75 diastolic seven minutes after the drug was taken (table 2). The heart rate increased from 79 beats per minute before glyceryl trinitrate to a maximum of 91 beats per minute 7 minutes after its administration, returning to the control level in 30 minutes (table 2). The electrocardiographic changes induced by glyceryl trinitrate were similar to those that developed after the performance of a modified exercise test by this patient. The administration of dihydroergocornine (0.5 mg.) subcutaneously failed to prevent the paradoxical response to glyceryl trinitrate.

Table 1.—*Effect of Two-Fifths Milligram of Glyceryl Trinitrate on Blood Pressure and Heart Rate in Patient in Case 1* *

	Blood Pressure, Mm. Hg	Heart Rate, per Min.
Control	142/90	94
After Glyceryl Trinitrate, Min.		
2	120/90	108
5	110/82	120
9	108/80	115
15	118/80	96
30	130/80	92

* With patient recumbent.

Case 3.—A 57-year-old Chinese male with diabetes mellitus presented no symptoms referable to the cardiovascular system. Although routine cardiac examination as well as electrocardiographic study revealed no abnormalities, results of the Master two-step test were positive (fig. 3*A*). When glyceryl trinitrate (0.4 mg.) was administered five minutes before exercise, the tracings (fig. 3*B*) showed T-wave inversion of greater magnitude and duration than that seen in the control test. It was also noted in this patient that sitting up resulted in inversion of the T wave in precordial leads V_4 to V_6, while standing extended the T-wave inversion to V_2. The administration of dihydroergocornine (0.5 mg.) failed to prevent the alterations induced by exercise or change in body position. Exercise, standing or sitting up, or administration of glyceryl trinitrate did not produce any untoward subjective symptoms in this patient. On the suspicion that venous pooling might be the cause of the described T-wave inversions, tight elastic bandages were applied to the patient's abdomen and/or lower extremities. Figure 3*C* and *D* shows clearly that the T-wave inversion due to standing was prevented by leg bandages (wrapped from feet to groin) whereas an abdominal binder alone was ineffective. It is seen from figure 4 that the application of leg bandages also prevented the T-wave inversion induced by glyceryl trinitrate when the patient was recumbent but failed to exert such an effect when the patient was in the sitting or standing position. Although the electrocardiogram indicated that leg bandages were superior to an abdominal binder with the patient erect, the ballistocardiogram revealed the abdominal binder to be more effective than leg bandages when the patient was recumbent (fig. 5).

Table 2.—*Effect of Two-Fifths Milligram of Glyceryl Trinitrate on Blood Pressure and Heart Rate in Patient in Case 2* *

	Blood Pressure, Mm. Hg	Heart Rate, per Min.
Control	120/70	79
After Glyceryl Trinitrate, Min.		
2	114/70	84
4	110/75	88
7	98/75	91
12	110/75	88
17	114/75	..
22	110/70	84
27	116/70	..
32	120/70	78

* With patient in sitting position.

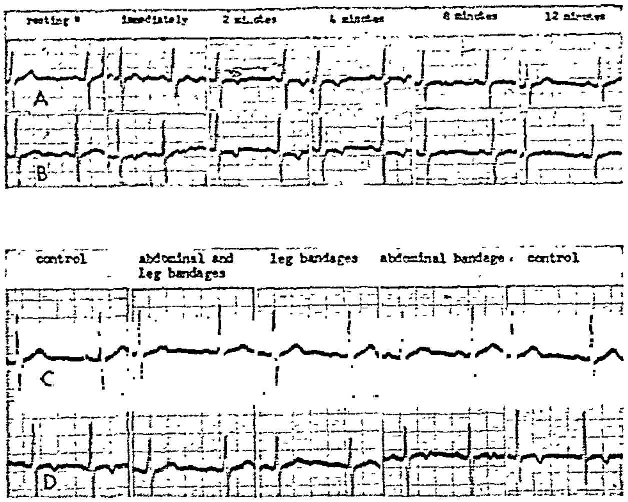

Fig. 3 (case 3).—Master tests (lead V_4) showing *A*, control response and *B*, response after premedication with glyceryl trinitrate. Note earlier and more prolonged inversion of the T wave in *B*. *C* and *D*, electrocardiograms (lead V_4) showing the effect of elastic bandages in preventing T-wave inversion on standing. Note that an abdominal binder alone was ineffective. *C*, reclining; *D*, standing.

COMMENT

The findings of this study indicate that, although glyceryl trinitrate is the most useful drug in the treatment of angina pectoris, it is an agent that possesses latent potentialities for adverse effects in this disease. Ten per cent of the patients in this study showed unfavorable electrocardiographic responses to the usual therapeutic dose of 0.4 mg. (1/150 grain). An additional 6% reacted paradoxically when larger dosage was employed. In all of these cases the electrocardiographic changes induced by glyceryl trinitrate were similar to those observed with the exercise test. It would seem therefore that a threshold dosage level may exist in many patients above which the resultant relaxation of the venous reservoir could reduce cardiac output and coronary flow sufficiently to outweigh beneficial effects derived from direct

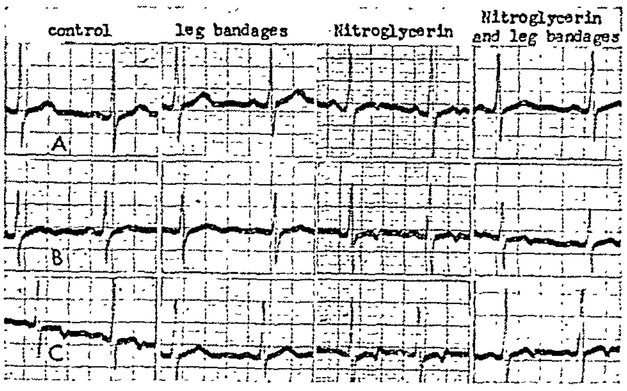

Fig. 4 (case 3).—Electrocardiograms (lead V_4) showing the effect of leg bandages in preventing T-wave changes associated with standing or induced by glyceryl trinitrate. Note that bandaging counteracted the effect of glyceryl trinitrate only when the patient was recumbent. *A*, reclining; *B*, sitting; and *C*, standing.

coronary vasodilatation. That these induced changes in the electrocardiogram after the administration of glyceryl trinitrate as well as after the assumption of the erect posture in some cases are not due to rotation of the heart or increased tonus of the sympathetic nervous system also appeared to be established. Thus deep inspiration failed to evoke similar electrocardiographic changes, while sympatholytic agents failed to prevent their appearance in the usual manner. On the other hand, the application of elastic bandages to the lower extremities prevented the changes occurring on standing and, to a lesser degree, those induced by glyceryl trinitrate. The genesis of the electrocardiographic alterations after the change from the supine to the erect position appeared to be similar to that underlying the glyceryl trinitrate response; venous pooling in the lower extremities seemed to be the major factor in both instances. It is of further interest that in the erect position the venous reservoir of the lower extremities appeared to play a greater role than the splanchnic area with respect to the improvement in venous return to the heart obtained by bandaging. On the other hand, in the horizontal position, the abdominal binder showed a more favorable effect on ballistic pattern than leg bandages. Inasmuch as anginal attacks are more usually encountered in patients who are active and erect, the possible therapeutic value of elastic bandages for the lower extremities in some cases would seem to deserve consideration. The evidence suggests that there may be a better rationale for the application of leg bandages than of an abdominal binder. Indeed, best results might be achieved by the combined use of both procedures.

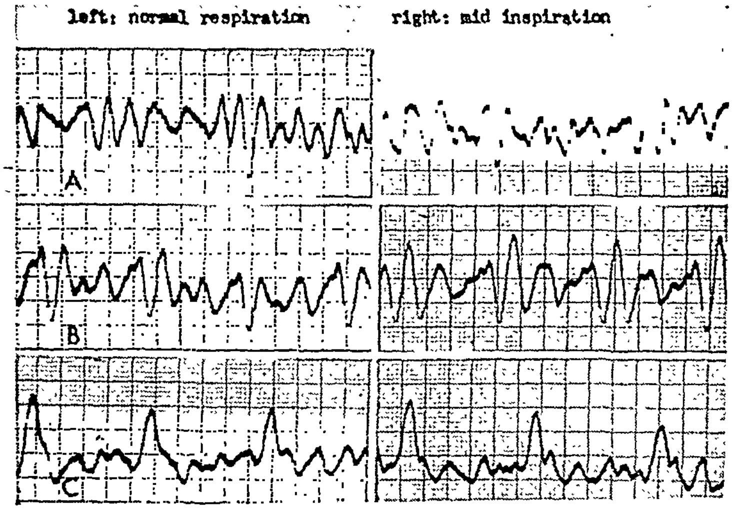

Fig. 5 (case 3).—Ballistocardiograms showing the influence of an abdominal binder or leg bandages on ballistic pattern. *A*, control; *B*, abdominal binder; and *C*, elastic bandages to legs. The most satisfactory e is seen in *B*.

The observations of this study appear to correlate well with the conclusions of Weiss and associates [2d] and Brandt, Caccese, and Dock [4] that glyceryl trinitrate decreases heart volume and stroke volume as a result of venous pooling and reduced return to the heart. The action of glyceryl trinitrate on the venous system suggests a possible therapeutic application of this effect in congestive heart failure. When used alone or in conjunction with tourniquets to the extremities, the administration of glyceryl trinitrate, perhaps in large dosage, many utilize the peripheral venous system as a reservoir, decrease the circulating blood volume, and reduce the size of the heart. Not only in the therapy of acute left ventricular failure but in its prophylaxis prior to contemplated exertion in patients with diminished cardiac reserve, this procedure has appeared to have distinct value.

This study indicates that the optimum dosage level for glyceryl trinitrate in most patients with angina pectoris is 0.2 to 0.3 mg. (1/300 to 1/200 grain) sublingually. Larger doses frequently induce unpleasant side-effects without improving therapeutic response or exert an adverse action upon the heart. In our opinion only the hypodermic tablet should be employed; the preparation (triturated) for oral use is ineffectual even in massive dosage orally or sublingually, and its use should be discontinued. Inasmuch as paradoxical effects from glyceryl trinitrate are encountered in patients with angina pectoris with therapeutic as well as with excessive amounts of the drug, establishment of the optimum dosage level in the individual case should constitute an important objective of therapy. Moreover, the precipitation of acute myocardial infarction should be recognized as a definite risk from overdosage during therapy of the anginal attack. Venous pooling in the lower extremities, diminished venous return to the heart, tachycardia, and fall in blood pressure are actions of the drug that not only interdict its use in acute myocardial infarction but reflect its danger when carelessly administered in angina pectoris. There can be no doubt that overdosage during self-medication for a severe paroxysm of angina pectoris is responsible for the precipitation of acute myocardial infarction in many patients.

SUMMARY AND CONCLUSIONS

A study of the effect of varying doses of glyceryl trinitrate (nitroglycerin), 0.2 to 1.2 mg. (1/300 to 1/50 grain), on the electrocardiographic response to standard exercise (Master two-step test) was undertaken in 158 patients with coronary disease who showed consistently positive changes in control studies. It was found that with a dose of 0.4 mg. (1/150 grain) given sublingually five minutes before exercise, 131 patients (83%) responded favorably, 11 patients (7%) showed no significant effect from the drug, and 16 patients (10%) demonstrated even greater abnormalities than were apparent in the electrocardiographic records of control tests. This study appears to indicate that individualization of dosage is an important prerequisite to rational therapy in angina pectoris.

The effect of glyceryl trinitrate on the resting electrocardiogram in 16 patients who responded paradoxically to the drug when given exercise tests caused us to make the following observations: 1. In all cases the electrocardiographic changes induced by glyceryl trinitrate were similar to those that were recorded in the performance of the Master two-step test. 2. Paradoxical response to glyceryl trinitrate is caused by venous pooling in the lower extremities, diminished venous return to the heart, and reduced coronary blood flow in spite of concomitant coronary vasodilatation. In some instances, change from the recumbent to the erect posture produced electrocardiographic alterations that were similar to those evoked by this drug. Elastic bandages on the lower extremities prevented the changes occurring on standing and to a lesser degree those induced by glyceryl trinitrate.

The possible value of an abdominal binder and leg bandages in angina pectoris is suggested by these observations, which indicate, however, that the legs are a more important venous reservoir than the splanchnic area when the patient is erect. 3. The action of glyceryl trinitrate on the venous system may have therapeutic application in the prophylaxis and treatment of acute congestive heart failure, in which condition decrease in venous return and diminution in heart size are important objectives of therapy. 4. Although glyceryl trinitrate is the most useful agent in the treatment of angina pectoris, it has not been adequately appreciated that the drug also possesses latent potentialities for adverse effects in this disease. The optimum dosage for most patients is 0.2 to 0.3 mg. (1/300 to 1/200 grain) sublingually. The precipitation of acute myocardial infarction is more than a theoretical danger from overdosage during treatment of the anginal attack.

176 Hart Blvd. (Dr. Russek).

CLINICAL NOTES

CORTICOTROPIN IN SEVERE ANGINOSE INFECTIOUS MONONUCLEOSIS

Capt. William Mandel
Lieut. R. J. Marilley Jr.
and
Lieut. L. M. Gaines Jr., (MC), U. S. A. F.

Respiratory obstruction resulting in death in one instance and requiring tracheotomy in eight instances has been reported in patients with anginose infectious mononucleosis. This is a report of a patient with infectious mononucleosis in whom the symptoms and signs of respiratory obstruction were severe enough to warrant a tracheotomy but who instead was first treated by intravenously administered corticotropin (ACTH).

REPORT OF CASE

An 18-year-old white male was first seen because of the onset of sore throat, dysphagia, hoarseness, swelling of the neck, weakness, malaise, headache, chills, and generalized aching of two days' duration. A diagnosis of "pharyngitis" was made at the onset of his illness, and he was given 300,000 units of procaine penicillin intramuscularly for two days. When the symptoms progressed, the dose of penicillin was increased to 600,000 units daily. Because he failed to respond to this treatment, he was admitted to the hospital. His history revealed that he had had the usual childhood diseases without known sequelae. His general health had been good, and he had not been jaundiced.

The patient was an acutely ill, well-developed, well-nourished young male. His skin was warm and flushed. His temperature was 102.4 F, pulse 118, and respiratory rate 32 per minute. He was in moderate to marked respiratory distress and was breathing through his mouth. His respirations were short, grunting, and shallow in nature. He was not cyanotic. There was retraction of the intercostal spaces with inspiration. There was no icterus of the skin or sclerae. His neck was markedly enlarged from two to three times its normal size by many discrete tender lymph nodes. It was similar to the bull-neck seen in patients with Hodgkin's disease. The uvula, soft palate, and pharyngeal areas were markedly reddened, hyperemic, and edematous. There were no exudates present. There was marked tenderness and moderate enlargement of the lymph nodes in the anterior and posterior cervical chains and in the axillary, epitrochlear, and inguinal areas. The heart was normal except for sinus tachycardia. There was slight distention of the abdomen, and it was tender to palpation in both the right and left upper quadrant areas. The liver was not definitely felt. The spleen was tender and was felt 4 cm. below the left costal margin. The neurological examination was normal. The remainder of the physical examination was normal.

The serologic test for syphilis, hemoglobin, red blood cell count, urinalysis, chest roentgenogram, blood urea nitrogen, and carbon dioxide-combining power were normal. The white blood cell count was 20,750 cells per cubic millimeter, with the differential count showing 61% lymphocytes and 33% neutrophils. The blood smear showed some prolymphocytes and Türk's cells as well as atypical lymphocytes that were suggestive, though not diagnostic, of infectious mononucleosis. The sedimentation rate was 13 mm. per hour. The cephalin-cholesterol flocculation was 3+ in 24 and 48 hours. The direct and total serum bilirubin and the thymol turbidity were normal. The heterophil antibody test was positive in a dilution of 1:448. After absorption with guinea pig kidney, the dilution was positive in 1:228, and there was no titer after absorption with beef red blood cells. On the third hospital day, atypical lymphocytes that were diagnostic for infectious mononucleosis appeared.

A tracheotomy was considered soon after hospital admission. Prior to this, it was felt that the effects of intravenous administration of corticotropin would be evaluated. The medicament was given daily over an 8 to 14 hour period for five days. The following daily doses were given: 15, 10, 7.5, 5, and 2.5 mg. for a total of 40 mg. The patient appeared almost well on the morning of the second hospital day—16 hours after admission. His temperature was normal. There was a noticeable decrease in the size as well as in the tenderness of his neck. His voice was no longer hoarse, and he was able to swallow without marked difficulty. The spleen could not be felt, and the abdomen was soft and nontender. This improvement continued throughout his hospital stay. There was a gradual fall in the total white blood cell count to within normal limits. The lymphocytosis, which varied from 40 to 72%, persisted throughout the hospitalization. There was a gradual fall in the sedimentation rate to normal. The heterophil titer remained unchanged. Except for weight gain, there were no adverse effects from the medication. The patient's course in the hospital was uncomplicated, and he was discharged 11 days after admission. He was seen one and three weeks after discharge and was well at both times. The laboratory studies on his last visit revealed a normal white blood cell count. There was a 45% lymphocyte count, and the atypical lymphocytes were still present. The sedimentation rate was 4 mm. per hour; the heterophil antibody test was 1:448, and it was 1:112 after guinea pig kidney absorption. The cephalin-cholesterol flocculation was 1+ in 24 and 2+ in 48 hours. The physical examination was normal except for small, firm, nontender cervical, axillary, and inguinal lymph nodes.

COMMENT

Librach,[1] in 1951, performed a tracheotomy for the relief of respiratory obstruction in a patient with infectious mononucleosis. He reported six similar cases. An additional case has since been added by Delaney and Nelson.[2] Two patients were treated, prior to the tracheotomy, with diphtheria antitoxin [3] and one with diphtheria

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1. Librach, I. M.: The Anginose Type of Glandular Fever: Report of a Case Requiring Tracheotomy, Lancet 1: 1105-1107, 1951.
2. Delaney, A. J., and Nelson, B. A.: Anginose Type of Infectious Mononucleosis Requiring Tracheotomy: Case Report, Ann. Otol. Rhin. & Laryng. 62: 213-216, 1953.
3. (*a*) Chen, K. C., and Teng, C. T.: Infectious Mononucleosis in a Chinese Simulating Laryngeal Diphtheria with Laryngeal Obstruction, Chinese M. J. 59: 116-130, 1941. (*b*) Lemierre, A.; Morin, M., and Alison, M.: The Serious Occurrence of Suffocation in Two Cases of Infectious Mononucleosis, Bull. et mém. Soc. méd. hôp. Paris 64: 51-54, 1948.

antitoxin and neoarsphenamine.[4] These may have contributed to the glottal edema and respiratory distress. In the one reported death [3b] due to respiratory obstruction, the patient had been treated with diphtheria antitoxin, and the author felt that this might have had some part in the fatality. In the past, cases of infectious mononucleosis were probably frequently diagnosed as diphtheria, and tracheotomies done for the latter disease may actually have been performed for severe anginose infectious mononucleosis.

Bender and Houghton [5] treated 11 patients with infectious mononucleosis with intramuscularly administered corticotropin. They reported prompt reduction in the pharyngeal inflammatory reaction and in the severity of the illness. They recommended use of this drug when the disease process was of more than average severity. Doran and Weisberger [6] reported one patient whose disease was complicated by thrombocytopenia, azotemia, and liver failure, and who improved coincident with the administration of corticotropin. They also suggested that the medicament be given in severe and complicated cases of infectious mononucleosis. Fiese and co-workers [7] reported a patient with virus encephalomyelitis (Guillain-Barré syndrome) associated with infectious mononucleosis who improved with the administration of corticotropin. Brutsche and Naegele [8] reported one patient who was seriously ill with infectious mononucleosis and who rapidly improved after the intravenous administration of corticotropin.

The results of the treatment in our case were similar to he experience of the above authors. There was marked and rapid clinical improvement associated with a decrease in the pharyngeal edema and a disappearance of the symptoms and signs of respiratory obstruction. This avoided the possible need for a tracheotomy. There was a decrease in the size of peripheral lymph nodes and of the spleen. There was no recurrence of the symptoms or recurrence of the signs of the disease when the medication was stopped.

SUMMARY

Corticotropin (ACTH) was administered intravenously to a patient with severe anginose infectious mononucleosis. This produced a rapid decrease in the signs and symptoms of the disease. A tracheotomy that had been contemplated for relief of the respiratory distress was no longer required. The use of corticotropin is advised in the patient with infectious mononucleosis who has marked respiratory difficulty.

4. Jones, G. P., and Jones, E.: Anginose Type of Glandular Fever Requiring Tracheotomy, Brit. M. J. **2:** 1212-1213, 1949.

5. Bender, C. E., and Houghton, B. C.: Treatment of Infectious Mononucleosis with Corticotropin, Northwest Med. **52:** 922-925, 1953.

6. Doran, J. K., and Weisberger, A. S.: The Use of ACTH in Infectious Mononucleosis, Ann. Int. Med. **38:** 1058-1062, 1953.

7. Fiese, M. J.; Cheu, S., and Radding, J.: Guillain-Barré Syndrome in Infectious Mononucleosis: Report of a Case with Recovery Following Administration of Cortisone, A. M. A. Arch. Int. Med. **92:** 438-441 (Sept.) 1953.

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INJURY AND DEATH FROM RED FUMING NITRIC ACID

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Serious injury by concentrated nitric acids is not infrequent, accounting for a significant number of the cases of disability and death from hazardous chemicals.[1] Toxicologically, the two major forms may be regarded as identical, since they are both extremely corrosive and since both emit dangerous fumes. Red fuming nitric acid contains dissolved oxides of nitrogen ("nitrous fumes"), which are toxic; decomposition of the acid on contact with oxidizable material liberates more oxides of nitrogen. White fuming nitric acid, though containing little dissolved oxides of nitrogen, decomposes on contact with oxidizable material just as red fuming nitric acid and also liberates oxides of nitrogen. The growing utilization of red fuming nitric acid (RFNA) by industry and by the armed services makes timely a brief restatement of its hazards, how they should be avoided, and what to do in case of exposure. Illustrative case histories are given.

The concentrated nitric acids are extremely corrosive fuming liquids, with varying amounts of dissolved oxides of nitrogen, which are evolved as reddish-brown fumes with small amounts of acid vapor. Nitric oxide in contact with air is fairly rapidly oxidized to nitrogen dioxide. Nitrogen dioxide readily polymerizes to nitrogen tetroxide, the inhaled fumes at body temperature consisting of approximately 30% NO_2 and 70% N_2O_4. These oxides form nitric acid on contact with water.[2] The fuming nitric acids constitute a definite hazard, causing injury by liquid contact with body surfaces and by inhaled fumes. Yellow discoloration of the skin follows brief contact, while more than momentary contact produces severe, slow-healing burns. Contact with the eyes may result in corneal injury with permanent visual impairment. Severe pulmonary injury may result from inhalation of "nitrous fumes." Four distinct clinical pictures in acute poisoning by inhalation of "nitrous fumes" have been described [3]: (1) the irritant gas type, in which there are signs of local irritation followed by a latent period of a few hours and then the development of pulmonary edema with death in one to two days; (2) the reversible type, in which there is a rapid succession of dyspnea, cyanosis, vomiting, vertigo, and sometimes unconsciousness; (3) the shock type, in which there is a very rapid onset of signs of suffocation, convulsions, and cessation of breathing; and (4) a combined form, in which there are early cerebral symptoms that subside after removal from the fumes. However, after a latent period of a few hours, pulmonary edema develops.

From the Chemical Corps Medical Laboratories.

Permission for review of the hospital record of the patient in case 1 was granted by Capt. G. B. Taylor (MC), U. S. N., Commanding, the Bethesda Naval Hospital; and permission for review of records and other material in case 2 was granted by the Director, Prince Georges General Hospital, Cheverley, Md., and by Dr. Russell S. Fisher, Maryland State Medical Examiner, Baltimore.

1. von Oettingen, W. F.: The Toxicity and Potential Dangers of Nitrous Fumes, Public Health Bulletin 272, Federal Security Agency, U. S. Public Health Service, 1941.

2. (*a*) Wood, F. C.: Poisoning by Nitric Oxid Fumes, Arch. Int. Med. **10:** 478 (Dec.) 1912. (*b*) von Oettingen.[1]

3. Flury, F.: Die Rolle des Stickstoffmonoxyds bei der Vergiftung durch Nitrose Gase, Arch. exper. Path. u. Pharmakol. **157:** 104, 1930.

This variation in the clinical picture may be best accounted for by the composition of the fumes. When the content of nitric oxide is high (in sources of "nitrous fumes," other than nitric acid, as for example in arc welding [4]), there are cerebral symptoms, whereas, when the content of nitrogen dioxide is high (as in nitric acid), there are irritant phenomena.[3] In the acute stage hemoconcentration and thrombocytosis may be observed. If there is a significant concentration of nitric oxide, methemoglobinemia may be found. Patients surviving pulmonary edema may develop bronchopneumonia, and purulent bronchitis may be a recurrent problem for several months. Late complications of this type may well be responsible for fatal cases that go unrecognized as being related to the initial injury.[5] A rare late complication is bronchiolitis obliterans, in which the main clinical features are cyanosis and dyspnea with a chest x-ray picture simulating that seen in miliary tuberculosis.[6]

Two cases of exposure in one accident are described here, illustrating burn and fume injury by nitric acid. The accident occurred Dec. 29, 1953, in a large top-floor laboratory where research utilizing red fuming nitric acid had been in progress for some time. The personnel involved had considerable experience in its handling, and the person directly involved in the explosion had done the task several times before the accident. About 6 liters of red fuming nitric acid was distributed in contact with strips of titanium metal among 24 Erlenmeyer-type glass flasks equipped with glass stopcocks for venting. The tray holding the flasks was in a conventional, ventilated wall-type laboratory hood. The laboratory was 90 by 40 by 10 ft. A chemist was venting a flask containing 250 cc. of red fuming nitric acid and strips of titanium when it exploded, starting a chain explosion of the other flasks.

REPORT OF CASES

CASE 1.—A 28-year-old chemist was showered with liquid acid of uncertain but probably high temperature. He was wearing rubber gloves and a jacket. As the room was filling with dense "nitrous fumes," fellow workers rushed to his aid and within seconds played running water on him with a hose. It was already apparent to his co-workers that his face was burned, the skin appearing chalky-yellow. Eighteen minutes after the explosion he was taken to a local hospital, where his eyes and ears were covered with a saturated solution of sodium bicarbonate and facial and body burns dressed with petrolatum gauze. He received penicillin, morphine sulfate, and fluids intravenously. For the first two days, he experienced nausea and vomiting. On the third day, he was transferred to the Bethesda Naval Hospital. On admission, his temperature was 103 F, pulse 136 per minute, and respirations 24 per minute. There were first and second degree burns of the entire face and of the nasal canal and third degree burns of the forehead and ears. The right cornea was semiopaque throughout, the left appearing similar but less severely burned. There were second degree burns of the upper neck; small scattered second degree burns of the chest; second degree burns in the right axilla; first and second degree burns of the abdomen; first and second degree burns of the penis and scrotum; scattered third degree burns of the dorsum of the hands, fingers, and radial aspect of the right hand and forearm; third degree burns of the medial aspect of the right arm and forearm; second and third degree burns of the left forearm; and third degree burns of the anterior aspect of the right thigh. On admission, the patient's chest was clear to percussion and auscultation, but he shortly developed severe dyspnea, the respiratory rate varying from 40 to 70 per minute. This was partly explained on the basis of pulmonary edema, but with the appearance of mediastinal and subcutaneous emphysema it was apparent that there was a rupture of the tracheobronchial tree at some point. Signs of respiratory obstruction appeared, and on the second hospital day a tracheotomy was performed, with marked decrease in the degree of cyanosis and improvement in respiratory effort. Considerable thick mucus and frothy edema fluid was suctioned from the trachea. A portable x-ray film of the chest revealed marked densities of edema scattered throughout both lung fields and the presence of mediastinal air. He was given oxygen and Alevaire (a mixture of 0.125% Superinone [oxyethylated tertiary octylphenol-formaldehyde polymer], 5% glycerin, 2% sodium bicarbonate, and water) and fluids intravenously in amounts sufficient only to maintain urine output. His condition remained very poor throughout the second hospital day, with cyanosis, rapid pulse, and rapid, shallow respiration. On the third day, however, his condition stabilized in an oxygen tent with Alevaire. He was given 100 cc. of serum albumin and took fluids orally. By the end of the third day, he was markedly improved. On the fourth day, he received 500 cc. of whole blood. A posteroanterior film of the chest on the sixth day was essentially normal. The mediastinal emphysema was resolved. The hospital course was then one of general improvement. His temperature, which varied from 101 to 103 F during the earlier stages, returned to normal by the ninth day. The right cornea, which had been semiopaque throughout, was clear by the 28th day, but the left cornea had become opaque. Skin grafting of the sites of third degree burns was begun on the 27th day. At the time this case was reviewed, two and one-half months after the accident, the patient was doing well, remaining hospitalized for various plastic procedures.

CASE 2.—A 38-year-old chemist was one of those who came to aid the patient in case 1 seconds after the accident. There is little information about early symptoms, other than that he is said to have had a cough after the accident and had tightness in the chest the first few days. He took sick leave, unusual for him, but complained of no symptoms other than cough, until Jan. 19, 1954. The cough increased in severity, and he experienced chilly sensations with fever. He consulted a physician for the first time Jan. 21, 1954 (21 days after exposure), who found only loud rhonchi on examination of the chest. His symptoms became rapidly and progressively more marked; he developed retrosternal pain, a feeling of tightness in the chest, and later shortness of breath. Treatment with chlortetracycline (Aureomycin) was begun Jan. 23, 1954. The following day shortness of breath was so severe the patient had to remain seated.

On admission to the hospital, Jan. 24, 1954, he had a dry hacking cough, marked dyspnea showing severe respiratory effort, and a respiratory rate of 52 per minute. Temperature was 104 F, pulse 128 per minute, and blood pressure 170/90 mm. Hg. Abnormal findings, limited to the chest, were wheezing, sonorous breath sounds, and rales throughout. Urine was normal, the red blood cell count was 4,050,000 per cubic millimeter, white blood count 11,100 per cubic millimeter, hemoglobin 13.1 gm. per 100 cc. The white cell differential count was polymorphonuclear leukocytes 81%, lymphocytes 14%, stab forms 3%, and eosinophils 2%. A posteroanterior chest film on admission revealed small, irregular densities, 1 to 2 mm. in diameter, diffusely scattered throughout the lung fields. These miliary-like densities had indistinct, irregular margins and were of uniform radiopacity. There was a closer relation to bronchial markings than to vascular ones. The patient was given chlortetracycline and dextrose and saline intravenously. His temperature fell to 99.4 F, and he remained afebrile. The hospital course was one of rapid deterioration. Cyanosis of the mucous membranes and nailbeds was noted and progressively deepened. Respirations gradually became shallow, the blood pressure fell, and the patient died Jan. 25, 1954, approximately 30 hours after admission. An autopsy was performed, which revealed bronchiolitis obliterans and acute pulmonary edema. The details of this case are the subject of another report.[6]

Five co-workers, involved in the rescue of the patient in case 1, were interviewed for any possible symptoms.

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All experienced some coughing while in the room, and three continued to have some cough for one to three days. Three had chest pain. One had difficulty in sleeping the second night after the accident, awakening with rapid respiration, a sensation of rumbling in the chest, and a deep desire to cough that he suppressed. One had nausea while exposed, and one had lacrimation. All had normal chest x-rays two weeks later.

COMMENT

The extreme rapidity with which serious and even fatal injury may be sustained by contact with liquid concentrated nitric acid or with its fumes makes it mandatory that prevention be emphasized. The cases described in this report illustrate the two types of injury by concentrated nitric acid; injury at the site of contact (in this case skin and eye) with the (liquid) acid, and pulmonary injury from inhalation of the "nitrous fumes" (the oxides of nitrogen). These cases are noteworthy in emphasizing the extremely hazardous nature of the material in that both patients were experienced chemists. Granted that, in these circumstances, the behavior of the acid was totally unexpected by these workers, the rapidity with which injury occurred despite quick action by all should promote greater efforts at prevention.

There has been considerable disagreement on an allowable concentration for safe exposure to the fumes. This ay in part be due to a failure to consider the composition f the oxides making up the fumes. Nitric oxide is primarily a cerebral depressant and also forms methemoglobin on contact with blood. Although it is oxidized rather rapidly to nitrogen dioxide on contact with air, if the initial concentration is high, symptoms will be pri- rily cerebral. If concentration of nitrogen dioxide is sole consideration, it is probable that 5 ppm is the maximum allowable concentration for chronic exposure.[7]

All possible foolproof safety devices for storage and transfer should be utilized in large-scale laboratory or industrial operations. Personal protective apparel should include eye protection as part of a hood system to cover the head, neck, and arms. Long-sleeved gloves should also be used. All apparel should be fabricated of nitric acid-resistant material. Breakage of carboys or other containers most frequently causes the accidents with serious results.[1] The chemical should not be handled or stored except where adequate ventilation exists or where provision for quick clearing of fumes has been made. If handling and storage is in a poorly ventilated area, or where quick clearing of fumes from the atmosphere cannot be accomplished, workers should wear self-contained oxygen breathing equipment during all operations. Above all, no one should handle concentrated nitric acid or enter a storage area alone. The companion's dual duty should be the enforcement of safety precautions and the prompt execution of first aid in the event of accident. Water in adequate amounts must be within a few seconds' reach of all who handle this material. This should be in the form of showers, immersion tanks, and the like for immediate washing of any part of the body, including the eyes. Application of dilute (1 to 5%) sodium bicarbonate solution may follow thorough washing.[8]

Since there can be no control of the nature of the fume composition in an accident of the sort described here and since no information on fume concentration in the atmosphere was obtained, it must be assumed that any or all types of systemic injury have been sustained by any given patient. Treatment is nonspecific and hence difficult and on the whole unsatisfactory. In the case of burns, after the initial decontamination, the injury should be handled as one would thermal burns. It should be noted that caustic injuries by nitric acid heal slowly. In the case of inhalation of fumes, the patient should be closely observed even though there appear to be no early signs of injury. The onset of pulmonary edema may be considerably delayed and insidious in development. Where there is any evidence of pulmonary damage, an antibiotic should be administered. The period of observation should be sufficiently long to exclude the development of late complications, which may mean a follow-up period of several weeks. Of first importance in evaluating the patient are serial roentgenographic examinations. Several reports have described the x-ray changes in the lungs after inhalation of oxides of nitrogen fumes.[9] This procedure is of particular importance in detecting the development of bronchiolitis obliterans, as in our case 2. Although this is a rare complication, some consideration should be given to its possible detection in the early stages and of its treatment. The development of bronchiolitis obliterans following pulmonary injury may occur within 14 days.[10] In one report of a patient exposed to "nitrous fumes" seven days prior to death, evidence of beginning organization was noted.[2a] In experimental animals exposed to various war gases, Winternitz [11] found organization as early as four days after exposure. In a patient showing small densities distributed diffusely throughout the lung fields in the roentgenogram, persisting longer than one week, the development of this disease should be strongly suspected.[6] As yet, no form of therapy has resulted in improvement when the clinical picture of bronchiolitis obliterans is complete. If, however, the potential victim is detected early, it seems reasonable to expect that a fatal outcome may be averted. It is apparent that suppression of the granulating process must be accomplished, and it is proposed that to this end corticotropin be utilized as well as some form of antibiotic regimen. Administration of fluids parenterally should be done cautiously in the expectation of pulmonary edema.

SUMMARY

Red fuming nitric acid is a dangerous material to handle and may cause serious injury by direct contact or through inhalation of its fumes. In one of two cases representing various features of injury due to red fuming nitric acid, there were serious acid burns of the body, damage to the cornea, and acute pulmonary edema. The other case ended fatally due to bronchiolitis obliterans.

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[10] Ehrich, W., and McIntosh, J. F.: The Pathogenesis of Bronchiolitis Obliterans: Observations in Cases of Bright's Disease, Arch. Path. **13**:69 (Jan.) 1932.

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VENTRICULAR ARRHYTHMIA INDUCED BY METHOXAMINE HYDROCHLORIDE

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John T. McLaughlin, M.D.
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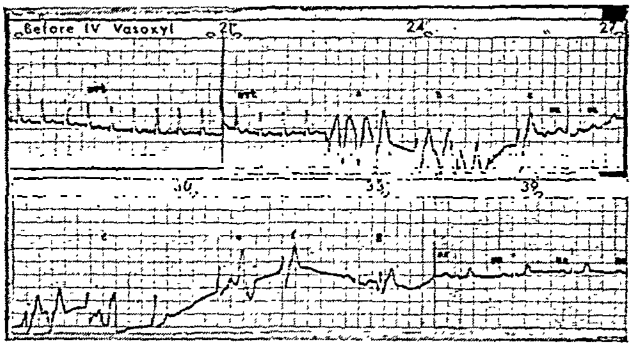
Methoxamine (Vasoxyl) hydrochloride is a synthetic sympathomimetic compound whose chief therapeutic use has been in the prevention of hypotension induced by spinal anesthesia.[1] Recent reports in the literature, however, have suggested that methoxamine hydrochloride is effective in terminating attacks of supraventricular tachycardia.[2] Chotkowski and co-workers [2b] have commented upon the dramatic reversion of the paroxysmal to the normal rhythm in a matter of seconds when the drug is administered intravenously, and Berger and Rackliffe [2a] state that methoxamine hydrochloride is perhaps unique among pressor amines in that it does not cause cardiac irritability. Stutzman and co-workers [3] noted that, of some 26 sympathomimetic compounds tested, only methoxamine hydrochloride and phenylephrine [4] (Neo-Synephrine) hydrochloride did not induce ventricular fibrillation in the experimental animal during cyclopropane anesthesia. Nathanson and Miller,[2c] however, noted ectopic ventricular activity after the administration of phenylephrine hydrochloride in a patient with shock following coronary occlusion, and, in a second patient with acute myocardial infarction, a supraventricular tachycardia treated with intravenously given phenylephrine hydrochloride was followed by ventricular tachycardia. One of us (W. E. S.) worked under the late Dr. M. Nathanson and so was able to see, at first hand, some of the patients with supraventricular tachycardia treated with methoxamine hydrochloride by this physician. No significant untoward effects were noted until recently, when a patient with supraventricular tachycardia developed ectopic ventricular activity following the intravenous administration of 10 mg. of methoxamine hydrochloride.

REPORT OF A CASE

A 35-year-old white male was seen in the office on the afternoon of July 27, 1954. After lunch that same day, the patient had returned to work when he noted the sudden onset of rapid, regular, forceful heartbeats. Because the rapid heart action persisted, he came to the office about one-half hour later. The only abnormal finding on physical examination was a rapid but regular heart rate of 160 beats per minute. An electrocardiogram revealed supraventricular tachycardia.

During the administration of all therapy, a continuous tracing of lead 2 was taken. Mechanical reflex stimulation of the vagus nerve was attempted without modification of the arrhythmia. After these procedures 10 mg. of methoxamine hydrochloride was given rapidly, intravenously. It may be noted from the electrocardiogram that, approximately 22 seconds after the administration of methoxamine hydrochloride, ectopic complexes, suggestive of ventricular tachycardia, made their appearance (a, b of figure). After an additional 4 seconds, apparent sinus rhythm was noted for two successive beats (sa of figure) and then multifocal ventricular complexes made their appearance (c, d, e, f, g of figure). Finally, maintained sinus rhythm of 70 beats per minute was noted, approximately 34 seconds after intravenous medication had been given. (Two unifocal premature ventricular complexes were noted during the next minute of the tracing, i. e., immediately after the restoration of maintained sinus rhythm.) The patient was subsequently hospitalized for medical examination. The patient at this time stated that he had experienced three attacks of rheumatic fever, at ages 7, 14, and 18 respectively. In addition, two other attacks of paroxysmal heart action had been experienced three and one years previously. The first attack was aborted after several hours by intramuscularly given sedatives and the second attack aborted spontaneously after a few minutes. Physical examination revealed a grade 2 to 3 systolic and diastolic murmur along the left border of the sternum and a grade 2 systolic murmur at the mitral area. Complete blood cell count, erythrocyte sedimentation rate, and blood iodine level were within normal limits. The temperature chart was unremarkable over a period of several weeks. Cardiac fluoroscopy confirmed the presence of aortic and mitral valvular disease.



Electrocardiographic recordings before and beginning 21 seconds after intravenous administration of methoxamine (Vasoxyl) hydrochloride in patient with supraventricular tachycardia: a, b, c, d, e, f, g—ectopic ventricular complexes; sa—auricular contraction arising from sinoatrial node; svt—supraventricular tachycardia with a ventricular rate of 160 beats per minute.

COMMENT

Methoxamine hydrochloride is able to induce rapid reversion of supraventricular tachycardia to sinus rhythm by apparent reflex vagal stimulation. This reflex is activated because of the rapid rise of blood pressure that stimulates the carotid sinus and other pressor receptors in the aortic arch. The safety of this drug has been pointed out by several authors,[5] although Chotkowski [2b] noted that, in all of his patients with supraventricular tachycardia, ectopic ventricular complexes appeared at the onset of rhythm reversion. One of this same author's patients, moreover, developed atrial fibrillation of about 40 seconds' duration during reversion.

Contrary to the experiences of the above-noted clinicians, we have recently observed an adverse complication during intravenous therapy with methoxamine hydrochloride that we feel is of a more serious nature than has heretofore been reported. In our patient, recurrent ectopic ventricular activity appeared in a temporal relationship that strongly points to methoxamine hydro-

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Attending physicians, Daniel Freeman Memorial Hospital (Drs. McLaughlin and Dowling).

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4. Orth, O. S.; Leigh, M. D.; Mellish, C. H.; and Stutzman, J. W.: Action of Sympathomimetic Amines in Cyclopropane, Ether and Chloroform Anesthesia, J. Pharamcol. & Exper. Therap. **67**: 1-16 (Sept.) 1939.

5. Footnotes 2 and 3.

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Phenylephrine and epinephrine are contraindicated in the hyperirritable situation of ventricular fibrillation. Except for the occasional spontaneous conversion of ventricular fibrillation to normal rhythm, the fibrillating heart must be brought to standstill before normal rhythm can be reestablished. Procaine and procaine amide have recently been used for this purpose. Procaine causes a rise in the heart rate, ventricular extrasystoles, and a fall in blood pressure, according to Humphreys and associates.[10] They think that tachycardia may be caused rather than prevented by procaine. From the time of the Mautz [11] demonstration that procaine is a myocardial depressant, however, many others have believed procaine to be excellent. In the presence of ventricular fibrillation, procaine injected into a ventricle, and possibly the right is the better one, does seem to have a paralytic effect. Procaine and procaine amide probably should be tried in any case of ventricular fibrillation in which defibrillation is not immediately accomplished by other methods.

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As first pointed out by Wiggers [2] and frequently reemphasized since, the myocardium must be oxygenated before defibrillation can be accomplished by any means. Electric shock is probably the most reliable of the methods, when a superabundance of oxygen is maintained. Lampson, Schaeffer, and Lincoln [12] reported a case in which ventricular fibrillation lasted for 27 minutes with survival by massage, which Beck [5] cites as the only recorded human case of ventricular fibrillation converted without electric shock. For defibrillation by electric shock, a current of from 1.5 to 2 amp. is necessary. At least 110 volts may be required, and, for a very large heart, Johnson and Kirby [13] are prepared to use as high as 270 volts. The time of application should not be over one-tenth of a second lest the heart be burned. The patient's entire body must be made to contract and almost to rise off the table before voltage can be assumed to be adequate for defibrillation. The defibrillating electrodes are applied to opposite sides of the heart either through or within the pericardium. Three or four shocks should be applied in rapid succession. There are numerous fairly simple electrical defibrillators now available on the market. All must meet the requirements outlined above.

CAUSES

Reflex Phenomena.—Vagovagal reflexes have been widely discussed. It is known that stimulation of the vagus nerves may depress the cardiac beat stimulus that usually rises in the auricle. Unless the specific tissue in the ventricles, in which there are no vagal nerve endings,[14] takes over, there will be no impulse and the situation of cardiac arrest will have ensued. If the specific tissue takes over in the multiple foci instead of from a single focus, fibrillation of the ventricles results. The fact that the vagus nerve may be stimulated in a wide variety of ways (vascular stretching, mucosal pressure, and serous lining irritation) explains the multiplicity of causes that have been reported as responsible for instigating cardiac arrest. These include: (1) traction on a mesentery or occurrence of a pulmonary embolus; (2) spraying of the throat; (3) insertion of an endoscopic instrument, moving of an endotracheal tube, or clamping of a bronchus; and (4) thoracentesis or incision into the pleura or pericardium.

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If the figures and data from these five cases of cardiac standstill and one case of ventricular fibrillation were in thousands instead of units, they would be more impressive perhaps, but I doubt if the following lessons brought induced by moving a gallstone in one instance (case 1 of the table) and by tracheal suction in the presence of prolonged tachycardia in the other (case 6 of the table) seemed to be precipitating factors. Administration of a large dose of tetracaine (Pontocaine) glucose solution (16 mg.) in the cerebrospinal fluid while preparing a 299 lb. (135.6 kg.) patient for a radical (Wertheim) hysterectomy for carcinoma of the cervix (case 4 of the table) was immediately followed by syncope. Cessation of respiration occurred, and the heart was observed to stop beating. It started at once with massage. Whether the third case was precipitated by bronchial biopsy or by hemorrhage is undetermined. The biopsy was followed immediately both by cardiac standstill and by hemorrhage. The heart started promptly after massage while the hilus of the lower lobe from which the blood had gushed was held compressed by the other hand. After reestablishment of cardiac function, a lobectomy was done, and the patient recovered uneventfully. In addition, a patient is cited who had bled to death from ulcer erosion of the gastroduodenal artery. The heart had stopped beating. With four transfusions running simultaneously, the gastroduodenal artery opening was plugged by manual pressure and the heart massaged. It was restarted and kept going for two and one-half hours by almost constant massage. Death then occurred. This case, however, is not one of cardiac arrest as under discussion here but rather an example of death from hemorrhage, and it shows only that it is possible to restart the heart of a recently exsanguinated person. This heart would not respond to external electric stimulation (Pacemaker)[7] either before or after massage. The six cases of cardiac arrest occurred in various places, as shown in the table.

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out by the cases would be any more valid. 1. All of these six abruptly arrested hearts were restarted. 2. The two patients in whom anoxia was the primary cause of cardiac arrest died. 3. Each of the three patients in whom effective massage was established within four minutes recovered with brain function intact. 4. Every one of the three patients in whom appreciable delay occurred became decerebrated although cardiac function was restored. 5. Cardiac arrest occurred elsewhere than in the surgical pavillion in two cases and at other times than during operation in four of the six cases. 6. Ventricular fibrillation must be treated actively as long as there is evidence of viability, fully normal recovery having been demonstrated after one hour and 50 minutes of artificially maintained cerebral and cardiac circulation. 7. The common causes of cardiac arrest are recognizable and definable and largely preventable. Full application of knowledge currently available regarding prevention would almost eliminate the complication, except in cardiac surgery itself.

CHEMICAL LABORATORY

XANTHINES, TANNINS, AND SODIUM IN COFFEE, TEA, AND COCOA

Robert G. Martinek, Pharm.D.
and
Walter Wolman, Ph.D.

The recent advent on the market of new types of preparations of coffee, tea, and cocoa has created an interest in the xanthine, tannin, and sodium content of these new types as compared with the older accepted forms. This report was prepared because of requests received by the Chemical Laboratory of the American Medical Association for this type of information. The xanthines include such substances as caffeine, theophylline, and theobromine. Tannins are complex materials with a high molecular weight that are formed from phenolic substances such as pyrogallol, pyrocatechol, phloroglucinol, and gallic acid, and these frequently are esterified with sugars. The tannins are recognized as protein and alkaloid precipitants. Differences between the various types of preparations are in most instances the result of the preliminary treatment given to the product by the grower or packager.

Instant coffee is prepared by extracting ground roasted coffee ith water. The powdered soluble coffee remains after evapora- of the water from this extract. Decaffeinated coffees are nerally prepared by steaming the green beans under pressure to soften them and by dissolving and extracting the caffeine with such organic solvents as benzene, chloroform, or alcohol. The residual solvent in the bean is then removed by resteaming before the roasting process. As yet it has not been possible to extract all the caffeine in commercially prepared coffee. During the roasting process, previously colorless tannins in the coffee bean are oxidized to colored products.

Teas are classified into two general classes, black tea and green tea. The differences arise from the treatment applied to the leaf. Black tea is a fermented product. The fermentation process (oxidation) reduces the astringency of the leaf and changes the color, aroma, flavor, strength, and body of its liquor. Upon fermentation of the tea the colorless tannins turn red or brown, which gives the tea its characteristic color. Green tea is a preparation in which the fermentation process has been arrested by steaming the green leaf and then drying it. The tannins in green teas are in their colorless state, and the lack of formation of the red or brown tannins is considered one measure of a good green tea. Of the xanthines in tea, theobromine and theophylline are present only in trace amounts. The predominant xanthine is caffeine.

The partially fermented cacao bean is the source of chocolate and cocoa. As defined by Webster, chocolate is "the solid or pliable mass obtained by grinding roasted cacao beans which have been freed from germ and shell"; cocoa is "chocolate deprived of a portion of its fat and pulverized." Theobromine is the predominant xanthine in cocoa. During fermentation the tannins are oxidized by oxidase enzymes to form a red coloring matter.

The accompanying tables give the percentage of certain xanthines, tannins, and sodium in several market preparations and the amounts present in a cup of the beverage. The methods of analysis were gravimetric[1] for caffeine, titrimetric[2] for tannins, and flame photometric[3] for sodium. The average values reported are based on duplicate determinations of single samples of material. Differences in the amount of the contents of different brands cannot be considered of significance because not enough samples were studied to establish statistically significant variations. The reported values were determined for the equivalent of a cup of beverage prepared according to the directions given on the label of each product; however, many users of these beverages do not follow label directions and prepare the beverages according to personal preference. Therefore, in most instances complete extraction of the sample was effected in order to determine the maximum quantity of the constituent potentially available. In some cases, contact between the solid and the water was limited to the time for preparation as stated on the label in order to check the amounts of the constituents obtained if the label directions were strictly followed. By this means, direct comparisons of the cups of beverages prepared from the various types of products were made.

The amount of caffeine in each of the several brands of the regular ground bean coffee is about the same (table 1). Tests with brand A indicate that the method of preparing a cup of coffee has little significant effect on the amount of caffeine extracted; extraction of the caffeine by any of the methods of preparation is virtually complete. Almost twice the amount of caffeine per cup can be obtained from the regular ground bean coffee as from the regular instant coffee; in contrast, the tannin content is somewhat higher in the instant type. Caffeine content per cup prepared from the regular ground coffee bean is roughly three times that of the regular decaffeinated coffee and about four to eight times that of instant decaffeinated coffee. Tannin content of the regular ground bean is slightly less than that of decaffeinated coffee. Advertising that makes claims implying the almost total removal of caffeine in decaffeinated coffees must be viewed with skepticism.

The potential caffeine content per cup prepared from bulk black tea is comparable to that from regular ground bean coffee, although, if prepared according to the label, about 65% of the leaf's caffeine is extracted (table 2). There is about three-quarters the amount of caffeine in green tea as in black tea. In general, the tannin content of tea is roughly four times that of coffee. The lower amounts of caffeine and tannins per cup obtained with tea bags are simply the result of the smaller amounts of tea used in each bag, as compared with the amounts recommended for use on the label of the bulk teas. Analyses indicate that there is over twice as much xanthine (theobromine) present in a cup of cocoa (table 3) as there is xanthine (caffeine) in coffee or tea.

A few sodium determinations were done on representative samples of the several types of beverages. These beverages were prepared according to the label instructions. The results indicate that there is about 0.30 to 0.35 mEq. of sodium per cup of coffee and about one-half that amount in tea. About the same amount of sodium is contained in a cup of cocoa as in a cup of coffee; however, over three times the amount of sodium is present in a cocoa produced by the Dutch process (a process in which cocoa is treated with alkali). For the sodium determinations the beverages were prepared with distilled water in order that the measurements would not reflect the sodium content of tap water, which varies with the locality. In calculating the amount of sodium imbibed by patients in drinking a cup of beverage, it is necessary for the physician to take into consideration the amount of sodium in a cup of the local water supply as well as that supplied by the material used for preparing the beverage.

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[1] Association of Official Agricultural Chemists: Official Methods of Analysis, ed. 7, Menasha, Wis., the Collegiate Press, George Banta Publishing Company, 1950, pp. 222, 224.

[2] Official Methods of Analysis,[1] p. 225.

[3] Operating Directions for Model 21 Coleman Flame Photometer, Maywood, Ill., Coleman Instruments, Inc., 1954.

TABLE 1.—*Caffeine, Tannins, and Sodium in Coffee*

	Average Caffeine, %	Maximum Caffeine per Cup, Mg.	Average Tannin, %	Maximum Tannin per Cup, Mg.	Sodium per Cup, mEq.
Regular Coffee					
Ground bean					
Brand A					
Percolator grind	1.1	97	1.1	90	.....
Coffee by 5 min. boiling	...	88	...	78	.....
Coffee by 5 min. percolation	...	95	...	83	.....
Drip grind	1.1	101	1.0	93	.....
Coffee by drip method	...	103*	...	89*	.....
Vacuum grind	1.1	106	1.1	111	.....
Coffee by vacuum method	...	104*	...	98*	.....
Brand B	1.3	119	1.1	104	.....
Brand C	1.5	107	1.0	72	.....
Brand D	1.2	101	1.1	94	0.30*
Instant coffee					
Brand B	2.2	67	4.3	128	.....
Brand D	2.0	55	4.1	111	0.35*
Brand E	2.0	52	4.4	111	.....
"Decaffeinated" Coffee					
Ground bean					
Brand F	0.34	28	1.2	101	0.33*
Brand G	0.33	35	1.2	121	.....
Instant coffee					
Brand F	0.90	25	6.7	187	.....
Brand H	0.37	13	3.8	134	.....

[*] The amounts per cup reported in these instances are obtained by following label directions for the preparation of the beverage. The remaining figures are based on longer periods of extraction to assure complete removal of the constituents under study.

TABLE 2.—*Caffeine, Tannins, and Sodium in Tea*

	Average Caffeine, %	Maximum Caffeine per Cup, Mg.	Average Tannin, %	Maximum Tannin per Cup, Mg.	Sodium per Cup, mEq.
Bulk Tea					
Black tea					
Brand A	2.9	110	11.8	430	....
Tea by 5 min. steep	...	71*	....	394*	....
Brand B	2.5	101	10.5	431	....
Green tea					
Brand C	1.9	76	11.7	475	....
Tea Bags					
Black tea					
Brand A	2.4	57	9.9	231	....
Tea by 5 min. steep	...	57*	....	197*	....
Brand B	3.3	71	10.4	226	....
Brand C	3.1	67	13.1	284	0.16*
Green tea					
Brand C	1.8	43	9.1	212	0.15*
Instant Tea					
Black tea					
Brand C	6.9	45	14.7	94	....

[*] The amounts per cup reported in these instances are obtained by following label directions for the preparation of the beverage. The remaining figures are based on longer periods of extraction to assure complete removal of the constituents under study.

TABLE 3.—*Theobromine, Tannins, and Sodium in Cocoa*

	Average Theobromine, %	Maximum Theobromine per Cup, Mg.	Average Tannin, %	Maximum Tannin per Cup, Mg.	Sodium per Cup, mEq.
Bulk Cocoa					
Unsweetened					
Brand A	3.3	284	2.5	215	0.34*
Brand B (Dutch process)	2.5	228	4.0	371	1.13*

[*] The amounts per cup reported in these instances are obtained by following label directions for the preparation of the beverage. The remaining figures are based on longer periods of extraction to assure complete removal of the constituents under study.

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SPECIAL MESSAGE FROM THE BOARD OF TRUSTEES—

NATIONAL COMPULSORY DISABILITY BENEFITS

The House Ways and Means Committee, without any public hearings, has reported H. R. 7225 to amend the Social Security Act. One proposed amendment is of vital concern to the medical profession because of its potential implications: an amendment to provide cash benefits to certain Social Security beneficiaries who are permanently and totally disabled. In effect, this proposal would establish, for the first time in this country, a system of national compulsory disability "insurance" under Title II of the Social Security Act. This title is the one under which the Old-Age and Survivors Insurance program is conducted.

Because of the piecemeal approach to the socialization of medicine, of which this proposal is the keystone, the medical profession and the nation as a whole have not been as alert to the danger as they were during the 1949-1950 campaign against the Truman-sponsored compulsory health insurance bills. The present danger, in fact, is greater. If this bill is adopted it can be confidently predicted that the cash disability benefits will gradually be extended to the temporarily disabled and that eventually the federal government will initiate a system of compulsory health insurance as a necessary counterpart to the cash benefits program. This combination of national compulsory health insurance and national disability benefits has been true in almost every other nation where government disability benefits exist. The combination becomes inevitable because the government must control the treatment of the disabled if it is to maintain any control over the extent of the cash benefits. In fact, the present bill requires concurrent rehabilitation for the permanently and totally disabled on which the cash benefits will be contingent.

The Social Security Act as adopted in 1935 and as later amended was dedicated primarily to the promotion of government-provided minimum economic security for older retired workers and their survivors. The extension of the act to involve disability was contemplated by many of its proponents from its inception, but not until the Social Security amendments of 1954 was a disability benefit included under OASI. The "waiver of premium" or "disability freeze" provision was enacted at that time whereby certain periods of permanent and total disability were excluded in the computation of benefits under Title II of the act for potential Social Security beneficiaries. With the enactment of this provision, physicians for the first time were brought into the operation of the act, in that their services were required to identify the disabled beneficiaries. The move to extend the "freeze" to include a cash benefit was predicted then and has now become a reality.

On the date of the preparation of this statement, we were exerting every effort to persuade the House of Representatives not to adopt this far-reaching change in the Social Security Act, although we were aware of the fact that our efforts would probably be fruitless. This awareness stemmed from our knowledge that previous proposals to expand the Social Security Act had met with almost unanimous bipartisan political support. Furthermore, the parliamentary situation in the House of Representatives was such that consideration of the bill was limited to 40 minutes of debate and no opportunity to amend.

It is unlikely that this bill will be considered by the Senate at this session of the Congress. When it is considered in the second session, public hearings will probably be held. The profession, therefore, has time to become thoroughly aware of the true nature of this bill and its effect on health insurance and medical practice and to take active steps to develop a public climate that will permit the members of the Senate to vote against it.

During the next several months THE JOURNAL will publish a series of articles on existing state and foreign governmental programs for the provision of cash benefits to the disabled. It is urgent that every physician, if he wishes to exert his full influence in the maintenance of the free practice of medicine, become thoroughly cognizant of the economic impact of these programs.

The distance between our present medical freedom and complete government regimentation has narrowed considerably. The remaining gap will be closed completely unless physicians throughout the nation take constructive action to educate themselves, the public, and their congressmen and senators during the next few months. On page 1036 of this issue of THE JOURNAL is a press release from Dr. Gunnar Gundersen, Chairman of the Board of Trustees, which is reprinted for the information of readers.

HEMORRHAGIC HAZARDS FROM MASSIVE SALICYLATE THERAPY

Ever since Link and his associates [1] asserted in 1943 that salicylates induced hypoprothrombinemia in rats, a condition preventable by an adequate amount of vitamin K in the diet, considerable experimental and clinical data, in part controversial, have been published with respect to the effects of salicylate therapy on prothrombin. A relation between salicylate therapy and hemorrhage has long been suspected. It is well known, for example, that acetylsalicylic acid may cause gastric bleeding, especially in sensitive persons. Recently, Hawk and his associates [2] reported a case of massive gastrointestinal hemorrhage following the ingestion of 1,400 grains (90.8 gm.) of acetylsalicylic acid over a three week period. In 1885 Balette [3] recognized the relationship between the ingestion of salicylates and uterine hemorrhage, and in 1890 Binz [4] described instances of excessive and prolonged menstrual flow in women receiving salicylic acid. Ever since, occasional reports have appeared pointing out the connection between uterine hemorrhage and salicylate therapy.

Nearly all investigators agree that the salicylates prolong prothrombin time, which indicates a decrease in plasma prothrombin content. The effect on prothrombin content is rarely observed unless large doses of salicylates (more than 6 gm. per day) are ingested, as in the case of patients with acute rheumatic fever. Prothrombinopenia is fairly proportional to the plasma salicylate level up to 60 mg. per 100 cc., but it is rarely critical until higher salicylate levels are reached. These levels are seldom established during a course of salicylate therapy because of the pronounced salicylism that occurs. Although studies in animals suggest that the various salicylates are equally effective in prolonging prothrombin time, acetylsalicylic acid is considerably more potent in some instances. This effect is enhanced by fever and elevated metabolism. The prothrombinopenic action of salicylates is neither as pronounced nor as constant as that of bishydroxycoumarin and other related anticoagulant drugs.[5]

The precise mechanism of salicylate-induced hypoprothrombinemia is undetermined. Although conventional liver function tests presumably do not indicate damage to the hepatic parenchyma after the clinical use of salicylates, nevertheless it has been established that salicylates affect certain enzymatic processes in the liver. Moreover, it has been suggested that both salicylates and bishydroxycoumarin may block the utilization of vitamin K. Administration of vitamin K can overcome the depressant action of salicylates on prothrombin formation. Whether the use of large doses of salicylates in human beings results in frank hemorrhage is still subject to differences of opinion. While adequately studied cases of hemorrhage due to salicylate-induced hypoprothrombinemia appear in the literature, the phenomenon is probably infrequent. Very high plasma salicylate levels are required to reduce the plasma prothrombin content to the critically low level associated with bleeding.

To summarize: Goodman and Gilman maintain that the administration of salicylates in massive doses can appreciably lower the plasma prothrombin content, but only rarely to critical levels. The not infrequent hemorrhagic episodes observed in patients with acute rheumatic fever may be due, at least in some instances, to large doses of salicylates. In general, physicians should be cautious about prescribing massive salicylate therapy for patients with liver damage and with preexisting hypoprothrombinemia or vitamin K deficiency, as well as for patients in whom surgery is contemplated. Use of vitamin K on a prophylactic basis does not necessarily protect patients against hemorrhage, which may ensue as a result of a disease process or of an action of salicylates other than on prothrombin. Finally, salicylates should not be used concomitantly with bishydroxycoumarin.

POSTGRADUATE AND GRADUATE COURSES

In this issue of The Journal the first annual listing of Postgraduate and Graduate Courses for Physicians appears (pages 1052 to 1131). This listing is for the period September 1, 1955, to August 31, 1956, and has been prepared by the Council on Medical Education and Hospitals. It replaces the two semiannual lists published heretofore. As a result of the recently completed Survey of Postgraduate Medical Education, the new listing includes many more sponsoring institutions than in the past. The two categories of "graduate" and "postgraduate" courses are based on the definitions of these two phases of medical education adopted by the House of Delegates in December, 1952. In brief, graduate medical education is designed to prepare a physician for specialty practice or an advanced academic degree, whereas postgraduate education is designed to keep the physician abreast of his own field of practice or enlarge his knowledge of one specific aspect of it. Most graduate medical education is in the form of residency training, which is not included in this listing. With renewed interest in postgraduate education developing in the past few years, it is hoped that the listings here presented will help to encourage even greater use of postgraduate study by physicians.

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4. Binz, C.: Vorlesungen über Pharmakologie für Aerzte und Studirende, ed. 2, Berlin, A. Hirschwald, 1891.

5. Goodman, L. S., and Gilman, A. Z.: The Pharmacological Basis of Therapeutics: A Textbook of Pharmacology, Toxicology, and Therapeutics for Physicians and Medical Students, ed. 2, New York, the Macmillan Company, 1955.

ORGANIZATION SECTION

STATEMENT OF DR. EDWIN S. HAMILTON ON H. R. 9 AND H. R. 10 BEFORE COMMITTEE OF THE HOUSE OF REPRESENTATIVES

I am Dr. Edwin S. Hamilton of Kankakee, Illinois, where I am engaged in the active private practice of medicine. I am a member of the Board of Trustees of the American Medical Association.

I appear here today as a representative of that Association to support H. R. 9 and H. R. 10, 84th Congress, measures designed to provide tax deferment on retirement funds for self-employed persons and others not covered by pension plans. With me is Frank G. Dickinson, Ph.D., Director of the Bureau of Medical Economic Research of the Association. At the conclusion of my statement I should like Dr. Dickinson to discuss the technical aspects of these proposals.

At the outset I would like to state that the Americal Medical Association has, for a number of years, endorsed the principle of legislation of this type. We have collaborated closely with representatives of the American Bar Association, the original sponsors of this measure, and other national organizations of self-employed taxpayers who would be afforded some measure of tax equity by the enactment of these bills.

Early in 1948 our Board of Trustees was apprised of a movement then under way to promote enactment of federal legislation under which self-employed persons, including physicians, could provide their own retirement benefits through the deduction of amounts annually from their taxable income to finance retirement plans. The Board approved this movement, stipulating that there would be a reasonable limitation on retirement benefits for which such a provision could be made. This action was commended by our House of Delegates, the governing body of the Association, at its meeting in June, 1948.

In June, 1951, at the annual session of the American Medical Association, three resolutions reemphasizing our endorsement of this principle were adopted by the House of Delegates.

On May 13, 1952, representatives of the Association appeared before this Committee in general support of H. R. 4371 and H. R. 4373, 82nd Congress. At that time, we suggested various amendments to those bills. H. R. 9 and H. R. 10 now before your Committee include all of the basic amendments recommended by the Association in 1952.

In June, 1952, and again in December, 1952, our House of Delegates reiterated the endorsement of these proposals and recommended that each member of the Association give them his careful study and active support.

On Aug. 12, 1953, representatives of the Association again appeared before this Committee in support of H. R. 10 and H. R. 11, 83rd Congress.

It is the belief of the American Medical Association that physicians, dentists, veterinarians, lawyers, architects, merchants, and the many others who comprise the nation's self-employed have long been neglected in federal tax legislation relating to pensions. Under the existing law, corporations are entitled to set aside tax-free money to purchase pensions and annuities for their employees, and millions of employees are benefiting from that arrangement. Yet the self-employed are denied this tax advantage in providing for their old age. The purpose of these bills is to eliminate this discrimination and inequity. By extending the tax deferment privilege to the country's eleven million self-employed, and also to the millions of employees who are not covered by pension plans, this legislation will give them an increased incentive during their best earning years to save for their old age.

Unless something is done to make self-employment as financially attractive as the employee relationship, we believe there is a grave danger that many professional men will bypass the private practice of their profession. The trend today is definitely toward becoming an employed person. This situation also contributes to a maldistribution of physicians, since it makes the large city more attractive to the young professional man by providing more opportunities for him to become employed.

On the basis of my own observations over many years of practice in medicine, I am convinced that this is one of the factors contributing to the pronounced migration of professional people into urban areas. So, quite apart from the objective of obtaining tax equality with our employed counterparts, we urge you to approve legislation of this type, because it is in the public interest.

This legislation will be of particular benefit to physicians and other professional men who go through a long and costly period of training and whose earnings are bunched into a comparatively short period of years when they are subject to high income tax rates.

The need for such relief was demonstrated recently in the Kintner case, in which the status of physicians in group practice, and their pension situation under Section 165 (a) of the old Internal Revenue Code, was in question, although, pointing up the need for the inclusion of physicians, among others, under this section, the case will not be of significant assistance, since less than 5% of our private practitioners are involved.

Under the program proposed in the pending bills, the amount of each person's pension would be determined by his own contributions, without one cent being added by the government. In addition, the program would not force an individual into idle retirement in order to draw upon his pension fund. Most important, it presents an opportunity for all who can provide for their own retirement to do so without undue discrimination against those who work for themselves.

Mr. Chairman, these comments indicate very briefly the general viewpoint of the American Medical Association toward this legislation. Because it removes a discriminatory factor which now discourages the private practice of medicine and other professions, it is in the public interest. Because it relieves an existing inequality, it should commend itself to you. Our Association is glad to join the American Bar Association and the other great national organizations of the self-employed in urging that your Committee act favorably on these bills.

STATEMENT OF DR. FRANK G. DICKINSON ON H. R. 9 AND H. R. 10 BEFORE COMMITTEE OF THE HOUSE OF REPRESENTATIVES

My name is Frank G. Dickinson, Ph.D.—not M.D.—of Evanston, Illinois. After teaching economics at the University of Illinois for twenty-five years, I became the Director of the Bureau of Medical Economic Research of the American Medical Association for whom I am speaking today. For the past three years I have served as the American Medical Association's representative on the Coordinating Committee on Pensions for the Self-Employed and the Pensionless Employed under the chairmanship of Mr. George Roberts of the American Bar Association.

I shall, as Dr. Hamilton of our Board of Trustees has already indicated, confine my remarks to the technical aspects of these identical bipartisan bills H. R. 9 and H. R. 10. I shall refer to them as the Jenkins-Keogh bills.

I shall not dwell on the history of this proposed legislation, but during the past several years certain misconceptions have grown up about this proposed voluntary pension system. I shall try to dispel these illusions.

First, it has been implied both here and elsewhere that what we really need is lower income tax rates for every taxpayer—the self-employed as well as the employed. This is a most disturbing illusion. We are not here today to discuss the general level of income tax rates or the differences between the rates for various income groups. We are here to discuss an inequality which will not be removed by a general reduction of income tax rates. There are *only* two ways that this inequality can be eliminated: the provision for tax deferment in Section 401 can be repealed, or legislation can be enacted which abolishes the requirement of an employer-employee relationship for pension plans under Section 401. I submit that these are the only two ways of removing this obvious inequality which has been admitted widely, even by persons opposed to the Jenkins-Keogh bills.

Second, the illusion has been created that these are bills for rich men. This implies that the eleven million self-employed persons are rich and the fifty million employed persons are poor. In 1953, the average annual income of unincorporated enterprisers was $4,107 (Source: National Income, 1954 Edition, U. S. Department of Commerce). Several hundred dollars of this average income—the exact amount is not known—was derived from the ownership of land, buildings, and equipment. The average annual earnings per equivalent full-time employee, for the same year, was $3,590, or $517 less than the average income of self-employed enterprisers. For the 25 year period, 1929-1953, average incomes of self-employed enterprisers exceeded the annual average wages and salaries of those employed by others by only $316. Furthermore, in eleven of these twenty-five years the average annual incomes of self-employed enterprisers were less than the average wages and salaries of the employed. Only earned income is included in employee earnings, that is, only wages and/or salaries. Their income derived from ownership of land, other forms of wealth, and claims on wealth is excluded. This excluded income might average several hundred dollars. It seems likely that the average earned incomes of the employed and the self-employed are about equal. Needless to say, these data do not support the contention that the self-employed are richer or "better off" than the employed.

Third, it has been implied that fringe benefits for employed persons are too small to worry about, too small to complain about. In November, 1954, the Chamber of Commerce of the U. S. reported that fringe benefits for 130 identical companies amounted to 20.2% of payroll in 1953 as compared with 15.2% in 1947. Admittedly, not all of these fringe benefits are applicable to the self-employed, but pension and profit-sharing benefits are definitely applicable to the self-employed. For these two types of fringe benefits the 130 identical companies contributed 8.0% of payroll in 1953 as compared with only 5.6% in 1947. Probably two-thirds of these specific types of fringe benefits mature as retirement benefits. These are not insignificant percentages nor do they involve slight amounts of business expense to the employer. None of this business expense is currently taxable income to the employees. A further indication of the upward national trend in fringe benefits can be gleaned from even a hasty reading of newspaper accounts of the new contracts between the United Automobile Workers and the Ford Motor Company and the General Motors Corporation. This conclusion is inescapable: there is an upward trend in the United States in fringe benefits for employed persons. We live in an era of expanding fringe benefits. But the self-employed person is on the outside looking in, paying his taxes and paying a higher price for consumer goods resulting, in part, from the addition of fringe benefits to labor costs of production.

Fourth, one illusion that has been created about this bill is more disturbing than the others. I refer to the claim that the passage of the Jenkins-Keogh bills would create inequalities against employed people. I want to examine this claim very carefully. According to the U. S. Department of Commerce (National Income, 1954 Edition) $4,927,000,000 was paid out by employers in the U. S. in 1953 as contributions to private pension and welfare plans. Of this $4.9 billion, $3.1 billion was contributed by employers to all manner of profit-sharing plans that normally mature as taxable pensions to the employee. And an additional $1.4 billion was in the form of contributions by the employer to pay premiums on "free group insurance." The remaining $0.4 billion represented employer contributions to other health and welfare plans. So before this legislation could create unbalanced discriminations against employed persons, it would first be necessary to remove the existing discrimination against the self-employed—and, to some extent, against the pensionless employed. To be even more specific, the counterpart of $4.9 billion for 1954—and the figure for 1955 will surely be close to $6 billion—must be found for the self-employed taxpayers who do not participate in this large amount of currently nontaxable income received by more than 21 million persons in forms other than money income. Those who look under the bed for new discriminations that might develop from this type of legislation should examine these data from the Department of Commerce very carefully and should, moreover, appreciate the great and growing extent of present discrimination against the self-employed.

Let me try to clarify this illusion. At first thought, it would seem that the employed person covered by private pension systems would be discriminated against because this proposed legislation would provide the qualified taxpayer with a "vested" interest in the amounts he sets aside and in the interest earned on those amounts. I grant that most employer-employee pension plans do not provide for complete vesting of the employer's contribution to the pension plan and even then only after many years of service to that employer. In particular, a self-employed person under these proposed bills could move from New England to California or change from one type of employment to another without losing complete control of his personal retirement fund. But the claim that this advantage for the self-employed under these bills has no counterpart in the existing programs for the employed is in error. Furthermore, there are no provisions in these bills which provide for the full and complete vesting in the industrial pension sense of the term "vesting" until after age 65. Some of the people who are creating this illusion will grant that there is no complete vesting until age 65 but will hasten to contend that if the self-employed person died before age 65 his accumulated pension fund would become a part of his estate. We must admit the accuracy of the claim, but it is not a discrimination against the employed person whose pension is being provided by his employer. The reason is that $1.4 billion was paid out by employers in 1953 for free group insurance. If an employed person gets from his employer a free life insurance contract paying a death benefit of $5,000 for $10,000, that employee is going to leave a bigger estate than most of the self-employed taxpayers dying before the age of 65, who had responded to the deferment incentive to save for their old age under these bills. In addition, many employed persons have death benefits as a feature of their retirement plans. The self-employed is obviously one person. He has no employer. He keeps the same "employer" as long as he remains a self-employed person. Gains, even forfeitures, to the pension plan resulting from individuals' quitting and seeking employment elsewhere have no economic meaning for the self-employed.

Fifth, there is an illusion that the revenue loss to the government would exceed $100,000,000 a year from the actions of the self-employed taxpayers alone. I have presented to this Committee on two other occasions evidence that $100,000,000 is a high estimate. I have not, however, presented any estimate of the revenue loss from amounts which pensionless employed persons would set aside for their old age under this proposed legislation. For reasons which I cannot understand, the Treasury Department has not provided your Committee with estimates of revenue loss. Perhaps I, as a citizen, should not complain about the failure of the Treasury Department to offer criticism of this estimate of $100,000,000 as a maximum revenue loss from the actions of the self-employed under this proposed legislation. It should be painfully clear to everyone who gives any thought to the question that very few of the self-employed or the pensionless employed will ever put all of their eggs in one basket, in this case, all of their savings in a voluntary pension fund which these bills clearly state cannot be withdrawn until age 65 unless the qualified person dies or becomes disabled for long periods of time. The annual revenue loss on the more than $3 billion now being set aside by employers in approved plans is certainly 10 times as great.

Sixth, there is the illusion that these bills will aid only persons of high income. It is closely related to the second illusion —the notion that all the 11 million self-employed people are rich and all the 50 million employed people are poor. I have stated that there is little difference in their average incomes, but there is another point that needs to be made, namely, that the propensity to save is the major consideration. Are the rich people in your neighborhood the only ones who save money? Are the poor people in your neighborhood, employed or self-employed persons, the only ones who do not save money? This legislation would not compel anyone to save for his old age. It would encourage the self-employed and the pensionless employed to save for their old age. But the propensity to save is not confined to any one income class, to any one population group, to persons living in cities of a given size, or to one section of the country. The fact is, some people are more concerned than others about the prospect of a penniless old age. I grant that the majority of the younger self-employed—say those under 45 years of age—are not as concerned with their retirement needs. And I also grant that most of these young earners, particularly those under age 35, are in the low earning period of their lives. As they grow older they will become more proficient in their jobs, they will earn more money, and as they get closer and closer to age 65 they will think more and more about providing in advance for their old age. But the claim that this is a rich man's bill, it seems to me, is nothing but an illusion. It must be stressed over and over again that these bills would not compel anyone to save for old age. To those who believe in a free society this is one of the crowning virtues of these bills.

The seventh and last illusion refers to the amount of income that can be set aside each year into a restricted retirement fund. The general rule is 10% of earned income, but not more than $7,500 a year, subject to a lifetime limitation of $150,000 on all the amounts set aside. There is the special rule (paragraph [c], page 3) which permits more than these annual amounts to be set aside each year by those qualified taxpayers over age 55 when these bills become effective. In my previous appearances before this Committee I pointed out in great detail that these provisions would provide for the accumulation of funds which could not finance a cash refund annuity in excess of $1,000 a month starting at the age 70. I also pointed out that more than ¾ of the pension plans approved in recent years under Section 165 (a) (now Section 401 (a) of the Internal Revenue Code) would permit maximum pension in excess of $1,000 a month.

In summary, I should like to review my seven points: First, the present discrimination against the self-employed would persist under any program of general lowering of personal income tax rates. Second, on the average, the self-employed are no "richer" (income-wise) than the employed. Third, fringe benefits for employed persons are large items in the cost of production and the trend in fringe benefits is upward. Fourth, the widespread gift of free life insurance by employers to employees covered by private pension plans (and to other employees) is the counterpart of the estate created by the accumulations in the retirement fund of the self-employed who die before age 65 under the Jenkins-Keogh bills. Fifth, so far as the self-employed are concerned, the annual revenue loss to the Treasury under the Jenkins-Keogh bills will not exceed $100,000,000, as compared with the annual revenue loss on the more than $3 billion set aside annually by employers in approved pension plans. Sixth, these bills will help finance the retirement needs of only those qualified taxpayers who are willing to save, whether they are rich or poor. Seventh, by industrial pension standards only pensions of moderate amount can be financed by qualified taxpayers under these bills.

I submit that these are reasonable demands for equality but I have also in my previous testimony expressed regret that I was not appearing before you in support of a simple resolution—a resolution that would direct the Treasury Department to draft rules whereby the self-employed could establish individual retirement plans, giving them the same tax encouragement to save for old age as is now provided more than 21 million officers and employees of corporations and employees of other establishments and organizations. No doubt the number of approved pension plans is now approaching 30,000 and the number of existing plans, 25,000. If my guess is about right—and the Treasury Department can correct me—there are now not more than 30,000,000 pensionless employed persons.

As a member of the Coordinating Committee, and as an individual, I have given a great deal of thought to an amendment to H. R. 9 and H. R. 10 which would accomplish what I sought by a simple resolution.

At the outset I should like to make it very plain that this amendment has not been considered by the American Medical Association, and is submitted to the Committee for the purpose of study. If it should be incorporated in a bill, or otherwise be presented in printed form as a proposal before this Committee, it will be reviewed in that form by the appropriate bodies of the American Medical Association.

Congressman Keogh, the lawyers representing the American Bar Association, and certain persons on the staff of the Legislative Counsel have helped in drafting this amendment. Moreover, I have been assured by other lawyers that my proposal—which I call the "9th decile limits"—is not an unconstitutional transfer from the Congress to the Treasury Department of the power to enact tax laws.

With the understanding that this amendment has not been considered by the American Medical Association, I should like to present as a final part of my testimony on the illusions that have grown up about the Jenkins-Keogh bills, the basic ideas and the technical features of this proposed amendment, unless the Committee already has received sufficient information from those witnesses who have preceded me.

NATIONAL COMPULSORY DISABILITY BENEFITS

The following news release was issued from the American Medical Association, July 15, 1955.—Ed.

Dr. Gunnar Gundersen, La Crosse, Wis., Chairman of the Board of Trustees of the American Medical Association, said today that a Democratic-sponsored plan to extend social security payments to the disabled and to raise taxes to pay for them is "strictly a political maneuver to influence votes."

"If the American people are going to retain their right to spend their money as they wish, they must stand up now and vigorously fight these super-Santa Claus proposals born of politics," Dr. Gundersen said, adding: "The proposals contained in this bill, which was sent to the House last Tuesday, actually provide an illusory benefit at the cost of ever-increasing taxation and loss of personal freedom." Speaking out after the House Ways and Means Committee approved the Social Security proposals by a vote of 21 to 3, Dr. Gundersen said: "A move by the majority of the Committee to railroad through the House an amendment to the Social Security Act which would provide national compulsory disability insurance without public hearings is an outrage. It is not easy to criticize national legislation which superficially appears to be a humanitarian effort to help disabled persons, and it takes courage for a politician to oppose it. Therefore, it is imperative that the American people take a strong stand against this proposal which, if adopted, will go far toward the nationalization of medicine.

"The levying of additional Social Security taxes by the federal government in order to distribute cash benefits to the permanently and totally disabled would inevitably be followed by federal control of the nation's physicians, who would be forced to carry out the regulations established by the government. It is incredible that Congress would consider legislation of such far-reaching implications without a full opportunity for public hearings. The fact is that only four states—New York, New Jersey, Rhode Island and California—have adopted similar legislation and most of the other states have considered and rejected it. In one state—Washington—where the people were given an opportunity through public referendum to pass on it, a bill to establish compulsory state sickness insurance was defeated three to one.

"This federal proposal includes an immediate 25 per cent boost in Social Security taxes and unpredictable future tax increases. A program already exists whereby the federal government and the states jointly participate in providing financial assistance to the permanently and totally disabled who are in need of it. In addition, over 40 million persons are covered by private insurance companies against loss of income because of disability. This legislation is another example of unnecessary federal invasion of a rapidly developing area of private enterprise."

MEDICAL NEWS

CALIFORNIA

Grant for Chronic Disease Studies.—To assist in the epidemiological studies of the bureau of chronic diseases of the California Department of Public Health, the Rockefeller Foundation recently appropriated $150,000 for a five year period. Among the problems being studied by the California bureau are the relation of occupation and heart disease; occupation and cigarette smoking as factors in lung cancer; nutrition in the health of older persons; and methods of morbidity measurement in the general population. The bureau during the past five years has extended its work, establishing working relationships with universities, local health departments, medical societies, and similar agencies useful in gaining access to and observing specific population groups.

Society News.—The California Society of Plastic Surgeons recently elected the following officers: Dr. James B. Johnson, Beverly Hills, president; Dr. Gerald B. O'Connor, San Francisco, vice-president; and Dr. Benjamin F. Edwards, Los Angeles, secretary-treasurer. The sixth annual meeting will be held at the Del Monte Lodge, Del Monte, March 22-24, 1956.——The following officers were elected by the California Society of Allergy at its annual meeting in San Francisco May 2: president, Dr. Lazarre J. Courtright, San Francisco; president-elect, Dr. Ben C. Eisenberg, Huntington Park; and secretary-treasurer, Dr. William J. Kerr, San Rafael.——The recently established California chapter of the American Foundation for Allergic Diseases has elected the following physician members of the board of directors: Ralph Bookman and George Piness, Los Angeles; Ben C. Eisenberg, Huntington Park; D. Edward Frank, Sun Valley; and Walter R. MacLaren, Pasadena.

MASSACHUSETTS

Appointments in Ophthalmology.—Drs. David G. Cogan and Walter M. Grant have been appointed professor and associate professor of ophthalmology, respectively, at the Harvard Medical School, Boston. They will continue their research and teaching at the Howe Laboratory, Massachusetts Eye and Ear Infirmary, which has been maintained by the Harvard Medical School since 1927.

Poison Information Center.—The Boston Poison Information Center, a cooperative venture of the four pediatric teaching services in the city, has been established at the Children's Medical Center, 300 Longwood Ave., under the sponsorship of the committee on accident prevention of the Massachusetts chapter of the American Academy of Pediatrics. Calls will be received at BEacon 2-2120 at any hour. Information may be obtained from the executive secretary, Dr. Lendon Snedeker (BEacon 2-7800). This service is available to any physician.

Personal.—The University of Louisville conferred an honorary doctor of science degree on Dr. Frederick H. Verhoeff, consulting chief of the Massachusetts Eye and Ear Infirmary, Harvard Medical School, Boston, at commencement exercises June 5. On June 6 Dr. Verhoeff spoke at the annual postgraduate seminar of the University of Louisville (Ky.) School of Medicine.——Dr. A. Clifford Barger, associate in physiology at Peter Bent Brigham Hospital, Boston, has been appointed associate professor of physiology at the Harvard Medical School.——Dr. Alfred H. Stanton, chief of the psychiatric closed ward section of the Veterans Administration Hospital, Boston, and assistant professor of psychiatry, Boston University School of Medicine, has been appointed psychiatrist-in-chief of the McLean Hospital, Waverley, and associate professor of psychiatry, Harvard Medical School, Boston.——John F. Enders, Ph.D., Brookline, a 1954 Nobel laureate in medicine, was awarded the honorary degree of doctor of science at the 129th commencement of Trinity College, Hartford, Conn. Dr. Enders is associate professor of bacteriology and immunology at Harvard Medical School, chief of the research department of infectious diseases at Children's Medical Center, Boston, and president of the American Association of Immunologists.

MICHIGAN

Diabetic Children's Camp.—There are a few openings left for Camp Midicha, the camp for diabetic children sponsored by the Michigan Diabetes Association and the Tau Beta Society. The fee for this camp will be based on the ability of the family to pay. The season is Aug. 14 to Aug. 24. For reservations call Dr. Kathryn L. O'Connor, BR 3-0350, before July 25.

NEW JERSEY

Contest in Orthopedic Surgery.—The New Jersey Orthopaedic Society will make an award annually of $100 in cash for the best original paper in English in the field of orthopedic surgery submitted by an intern or resident (in any field) in a New Jersey hospital. The paper may cover any aspect of the field, such as pathogenesis, pathology, diagnosis, and treatment. The work on which the paper is based must have been done during, and completed not later than six months after, internship or residency in a New Jersey hospital. The paper should be submitted for the current award to the secretary of the society, Dr. Arthur S. Thurm, 533 W. State St., Trenton 8. The winner of the award will be invited to present the paper personally at the spring meeting of the society.

NEW YORK

Dr. Sawyer Receives Kaiser Award.—At the annual meeting of the Rochester Academy of Medicine May 24, the Albert David Kaiser medal for 1955 was awarded to Dr. William Alfred Sawyer, Rochester, "for his distinguished contribution and dedicated service to industrial medicine and to the health and welfare of our community and nation." Dr. Sawyer retired four years ago as medical director of the Eastman Kodak Company after 32 years of service. He is a former president of the Industrial Medical Association and holds the Knudsen award, which he received in 1943.

Dr. Potter Appointed Dean.—Dr. Howard W. Potter, acting dean of the State University of New York College of Medicine at New York City, Brooklyn, has been appointed dean of the college. Dr. Potter, who has been a faculty member for 15 years, has been professor and chairman of the department of psychiatry. Previously, he was a member of the New York Psychiatric Institute of the state department of mental hygiene and clinical professor of psychiatry at Columbia University College of Physicians and Surgeons. During World War II, he was medical supervisor of the Port of New York for Merchant Marine War Shipping Administration, engaged in the rehabilitation of seamen from torpedoed ships. Dr. Potter is a past-president of the American Association on Mental Deficiency, the New York Society for Clinical Psychiatry, and the New York Psychiatric Society.

Society News.—The New York Diabetes Association announces the removal of its offices from 2 E. 103rd St. to Rooms 405 and 406, Building A, 270 Park Ave., New York 17 (telephone: PLaza 3-2266).——Newly elected officers of the New York Academy of Gastroenterology include: Dr. Franz J. Lust, New York City, president; Drs. A. Xerxes Rossien, Kew Gardens, Jerome A. Marks, New York City, and Milton J. Matzner, Brooklyn, first, second, and third vice-presidents respectively; Dr. Joseph Roger Van Dyne, Forest Hills, secretary; Dr. Alexander Slanger, Brooklyn, recording secretary; and Dr. William C. Jacobson, New York City, treasurer.——Newly elected officers

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

of the Nassau branch of the American Psychiatric Association include: Dr. Lester Shapiro, Rockville Centre, president; Dr. Ursula G. Stewart, Elmont, vice-president; and Dr. Irving Chipkin, Hempstead, secretary.——The Medical Society of the County of New York recently elected the following physicians from New York City as officers: Dr. Gerald D. Dorman, president; Dr. Samuel Z. Freedman, president-elect; Dr. Philip D. Allen, vice-president; Dr. William L. Wheeler Jr., secretary; Dr. George Himler, assistant secretary; Dr. George W. Fish, treasurer; and Dr. Charles F. Stewart, assistant treasurer.

Two-Way Radio for Postgraduate Education.—A new technique of classroom instruction will be launched this fall by Albany Medical College as part of its postgraduate medical education program, under a grant from the Rockefeller Foundation. It envisions the use of a "master transmitter" at the college, which will send lectures and discussions of the teaching staff via high-frequency "amateur" wave lengths to special receivers located in hospitals in the eastern part of upstate New York, where transmitters operating on the same wave length will permit physicians hearing the instructions to take active part in the sessions. The physicians may interpose questions and have them answered immediately by the instructors. There will be opportunity for free discussion between instructors and postgraduate students. It is expected that about 10 institutions will take part. Test sessions indicate that the effective range of the broadcasts may be about 75 miles. The broadcasts will be made on prearranged schedules, and physicians will assemble at the hospitals nearest them to listen to the teaching sessions. The college will continue to conduct its regular program of postgraduate medical education as well as its special teaching days. Dr. Frank M. Woolsey Jr., associate dean, is director of postgraduate education.

New York City

Hospital News.—The Roosevelt Hospital has appointed a full-time clinical research editor, who will assist the staff with bibliography searching, abstracting, and editing of articles and reports for publication.——The Bronx Hospital recently dedicated its new $800,000 Louis Altschul Laboratory building, a two story center adjacent to the main building at Fulton Avenue and 169th Street. The building houses the Bronx Hospital's departments of pathology, chemistry, bacteriology, and related laboratories, in addition to research laboratories for its departments of medicine and surgery. The second floor provides living quarters for the house staff of interns and residents as well as an auditorium.

Cystic Fibrosis Association.—The first of a series of grants for research in cystic fibrosis was recently made by the Cystic Fibrosis Association to the Presbyterian Hospital at the Columbia-Presbyterian Medical Center. The association was organized by a group of 35 parents of children with cystic fibrosis, who early this year began a fund-raising campaign and who on April 1 officially organized the Cystic Fibrosis Association. Their membership has more than tripled and now includes parents from New York, Connecticut, and New Jersey. The association's headquarters, opened early in June, are in the Hotel Martinique, Broadway and 32nd Street. Research work under the grant will be directed by Dr. Dorothy H. Andersen, associate attending pathologist and associate professor of pathology, and Dr. Paul di Sant'Agnese, assistant professor of pediatrics, Columbia University College of Physicians and Surgeons.

Courses in Physical Rehabilitation.—The Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, 400 E. 34th St., will offer a three week seminar in physical rehabilitation methods for nurses, Oct. 24-Nov. 11; Jan. 9-27, 1956; and April 2-20. The course is designed for registered nurses in the hospital as well as in the public health fields. Tuition is $60 for the seminar and $20 weekly for additional clinical observation, practice, and field trips. The institute will also offer a four week advanced course in physical rehabilitation methods for physical therapists, Nov. 21-Dec. 16; Feb. 6-March 2, 1956; and April 30-May 25. Four points of either undergraduate or postgraduate credit will be given. Tuition, $80 ($20 per point); registration, $8. Qualified veterans may enroll in the course under the provision of P. L. 346 or P. L. 16. Information may be requested from Mrs. Edith Buchwald Lawton, Director of Rehabilitation Courses for Physical Therapists, Institute of Physical Medicine and Rehabilitation, 400 E. 34th St., New York 16.

NORTH CAROLINA

Society News.—The North Carolina Pediatric Society recently elected Dr. Wilburt C. Davison, Durham, president; Dr. Charles F. Williams, Raleigh, president-elect; and Dr. William Hersey Davis Jr., Winston-Salem, secretary-treasurer.

Personal.—The North Carolina Public Health Association recently bestowed its Carl V. Reynolds award on Dr. Margery J. Lord, health officer of Asheville for 15 years, and on Dr. Frederick J. Wampler, health officer, Granville County.

Conference on Tuberculosis Control.—The theme for the sixth Institute on Problems in Tuberculosis Control, Chapel Hill, July 31-Aug. 3, will be "Tackling Community Roadblocks Encountered in Rehabilitating the Patient." The institute will be sponsored by the North Carolina Tuberculosis Association; the schools of public health, social work, and medicine of the University of North Carolina, Chapel Hill; the division of vocational rehabilitation; the sanatoriums; and the state boards of health and of public welfare.

Dr. Lawrason Goes to Arkansas.—Dr. F. Douglas Lawrason, assistant dean, University of North Carolina School of Medicine, Chapel Hill, has been appointed provost for medical affairs and acting dean of the University of Arkansas School of Medicine, Little Rock. Dr. Lawrason, who will assume his new duties Aug. 1, will be the chief administrative officer of the new health center, consisting of a 500-bed hospital, with schools of medicine, nursing, and pharmacy. Dr. Lawrason has served as assistant professor of medicine at Chapel Hill since August, 1953. Previously he was on the staff of the Yale University School of Medicine, New Haven, Conn., and with the National Research Council of the National Academy of Sciences in Washington, D. C.

PENNSYLVANIA

Society News.—The Pennsylvania Academy of Physical Medicine and Rehabilitation recently elected the following officers: Dr. Joseph F. Dreier, Wilkes-Barre, president; Dr. James S. Martin, Lancaster, vice-president; and Dr. J. Murl Johnston, Pittsburgh, secretary-treasurer.

Colonel Whayne Appointed Professor.—Col. Tom F. Whayne, U. S. Army Medical Corps, retired, has been appointed professor of public health and preventive medicine at the University of Pennsylvania School of Medicine, Philadelphia, and coordinator of the program of medical education for national defense in the school of medicine.

Philadelphia

University News.—Dr. Elizabeth V. Lautsch, McGill University Faculty of Medicine, Montreal, Canada, has joined the faculty of the Woman's Medical College of Pennsylvania as associate in pathology.

Kober Medal to Dr. Stadie.—At the annual meeting of the Association of American Physicians in Atlantic City, Dr. William Christopher Stadie received the Kober medal, awarded annually by the Kober Foundation at Georgetown University, Washington, D. C., to a member of the association. Dr. Stadie, who was assistant professor of medicine at Yale University School of Medicine, New Haven, Conn., from 1921 to 1924 and assistant professor of research medicine at the University of Pennsylvania from 1924 to 1941, has since served the latter as John Herr Musser Professor of Research Medicine. The Kober Medal is provided for by a $16,000 endowment fund, established in 1923 by the late Dr. George M. Kober to commemorate the 50th anniversary of his graduation in medicine from Georgetown. The fund also pays the expenses of an annual lecture on a medical subject, a scholarship in the Georgetown University School of Medicine, and a gold medal awarded to the best student in hygiene.

WASHINGTON

Bacteriologists Needed.—The Washington State Personnel Board announces an examination for bacteriologists. There is one current opening with the laboratory of the state department of health in Seattle. Positions are also found in local health department laboratories throughout the state. Vacancies occurring in the next two years may be filled by appointments from the eligible list to be established at this time. Applicants must be graduates of an accredited four year college or university, with a major in medical microbiology or a comparable major (medical or public health bacteriology) including laboratory course work in pathogenic bacteria, serologic diagnosis, water and milk bacteriology, and chemistry. Applicants with courses in parasitology, immunology, qualitative and quantitative chemical analysis, physics, mathematics, and zoology will be given preference in appointments. Residence in the state of Washington is not required, but state residents may be given preference in appointment. Applicants must be United States citizens. Applications will be accepted until 5 p. m. Aug. 1, 1955. Information is available from State Personnel Board, 1069 Capitol Way, Olympia (mailing address, P. O. Box 688, Olympia).

WISCONSIN

Hospital News.—Dr. Ernst Schmidhofer, formerly affiliated with the Veterans Administration Center in Jackson, Miss., has been appointed medical director of the Milwaukee County Asylum for Chronic Insane, a position left vacant since the death of Dr. Ralph M. Fellows. Dr. Morris Gelfman, who was formerly with the Veterans Administration Hospital at Downey, Ill., has been named clinical director of the asylum.

Society News.—Drs. Robert G. Washburn, Milwaukee, and Maynard H. Fuller, Green Bay, have been awarded life memberships in the State Medical Society of Wisconsin in recognition of their "achievements in the ranks of medicine." Dr. Washburn served as staff dermatologist for Columbia, St. Mary's, and Milwaukee Children's hospitals. Dr. Fuller has served as president and secretary of the Brown-Kewaunee-Door County Medical Society.

Rare Medical Circulars Sought.—Two rare medical circulars concerning the University of Wisconsin Medical School, Madison, and a private hospital, the Lake Side Retreat, once located on the south margin of Lake Menona near the site of the new headquarters of the State Medical Society of Wisconsin are being sought by the state historical society and the section on medical history of the state medical society. Clues to the circulars, no copies of which are known to exist, are given in a letter, dated Feb. 8, 1857, from Dr. Alexander Schue, former Madison physician and surgeon, to Dr. Robert Peter, chemist of Transylvania College. Any physician knowing of these circulars is urged to contact Dr. William D. Stovall, Chairman, Section on Medical History, State Medical Society of Wisconsin, Box 1109, Madison 1.

GENERAL

Urology Award.—The American Urological Association offers annual awards equaling $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been graduated not more than 10 years and to men in training to become urologists. The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Statler Hotel, Boston, May 28-31, 1956. For particulars write the Executive Secretary, William P. Didusch, 1120 North Charles St., Baltimore. Essays must reach him before Dec. 1, 1955.

Kappa Delta Award.—A prize of $1,000, donated by the Kappa Delta Sorority, is offered annually by the American Academy of Orthopaedic Surgeons for the best research related to orthopedic surgery and performed by an American citizen in the United States. Selection for the current year will be made from publications after Jan. 1, 1953, or research presented to the committee on scientific investigation of the American Academy of Orthopaedic Surgeons before Nov. 1, 1955. Researchers may secure information from the Chairman of the Committee on Scientific Investigation of the American Academy of Orthopaedic Surgeons, Dr. Paul R. Lipscomb, 200 First St., S. W., Rochester, Minn.

Symposium in Psychiatry.—A two day symposium will be held as part of the program of the American Association for the Advancement of Science Dec. 27-28 at Atlanta, Ga. The symposium, "Physiological Bases in Psychiatry," will have four sessions: "New Psychopharmacological Agents," "Mechanisms of Actions in New Agents," "Effects of Alcohol on Brain Respiration and Metabolism," and "Alcohol Addiction-Mechanisms and Treatment." Those wishing to take part in this program may contact either Dr. Harold E. Himwich, Galesburg State Research Hospital, Galesburg, Ill., who is a representative of the American Psychiatric Association, or Fred A. Hitchcock, Ph.D., Ohio State University, Columbus 10, Ohio, who is a representative of the American Physiological Society.

Glycerine Research Awards.—The Glycerine Producers' Association is accepting nominations for the fourth annual Glycerine Research awards. First award is $1,000 and an honor plaque; second award, $300 and an honor certificate; and third award, $200 and an honor certificate. Research bearing on the chemical, physical, or physiological properties of glycerine or on the properties of glycerine-derived or glycerine-containing materials is eligible. Work exhibiting originality in extending glycerine's usefulness in new applications will merit special consideration. Nominations, made on official entry blanks, must be received by Nov. 1, 1955. Details can be obtained by writing to the Awards Committee, Glycerine Producers' Association, 295 Madison Ave., New York 17.

Awards to Teach in Foreign Countries.—Announcement is made of U. S. government awards for the academic year 1956-1957, authorized under the Fulbright Act and presented under the auspices of the Department of State and the Board of Foreign Scholarships. Awards are available for university lecturing and advanced research in Austria; Belgium and Luxembourg; Denmark; Finland; France; Germany; Greece; Iraq; Italy; Japan; Netherlands; Norway; Pakistan and East Pakistan; and the United Kingdom colonial dependencies. Applicants must be United States citizens. Information is obtainable from the Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Ave., Washington 25, D. C.

Children's Exocrine Research Foundation.—The Children's Exocrine Research Foundation, a nonprofit organization, has recently been formed to encourage and support research in cystic fibrosis of the pancreas and to disseminate knowledge concerning this disease to the medical profession. Research will also include work on closely related conditions. The foundation, with headquarters at 2300 Westmoreland St., Philadelphia, will welcome applications for research grants. Dr. Sidney Farber, Boston, is chairman of the Scientific Advisory Board and Dr. Paul R. Patterson, Albany, N. Y., is chairman of the Medical Education Committee. The organization does not conduct public campaigns or solicit funds from the general public. Money is raised through grants from other foundations interested in medical research and from selected corporations and individuals.

Fellowship in Rheumatic Fever.—The New York State Department of Health has made available a grant to provide a fellowship in rheumatic fever of one year for a physician with a good general or pediatric background who lacks specific training in this field. Priority will be given to a physician wishing to make full-time teaching, research, or public health a career and who has an interest in children's rheumatic fever and related programs. The major part of the training will be at the New York University-Bellevue Medical Center and at Irvington House, a special institution at Irvington-on-Hudson, N. Y., for rheumatic children, affiliated with the New York University-Bellevue Medical Center. The budget for the fellowship is as follows: (1) stipend, $4,200; (2) travel expenses, $800. Applicants should write to the Medical Director, Irvington House, Irvington-on-Hudson, N. Y.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

Area	July 2, 1955		June 3, 1954, Total
	Paralytic Type	Total Cases Reported	
New England States			
Maine	..	..	2
New Hampshire	..	..	..
Vermont	..	..	..
Massachusetts	..	1	5
Rhode Island	..	..	..
Connecticut	1	6	6
Middle Atlantic States			
New York	17	25	23
New Jersey	..	5	6
Pennsylvania	..	10	6
East North Central States			
Ohio	1	22	20
Indiana	..	4	9
Illinois	4	10	14
Michigan	3	9	24
Wisconsin	5	9	3
West North Central States			
Minnesota	2	2	10
Iowa	1	10	13
Missouri	1	4	7
North Dakota	2	3	3
South Dakota	..	..	..
Nebraska	..	3	14
Kansas	..	2	10
South Atlantic States			
Delaware	..	1	1
Maryland	1	3	..
District of Columbia	1	1	..
Virginia	1	8	5
West Virginia	1	3	3
North Carolina	6	8	10
South Carolina	1	6	9
Georgia	3	5	24
Florida	1	10	40
East South Central States			
Kentucky	1	3	6
Tennessee	1	3	6
Alabama	..	8	5
Mississippi	3	9	10
West South Central States			
Arkansas	2	5	11
Louisiana	9	17	18
Oklahoma	1	4	13
Texas	20	43	104
Mountain States			
Montana	Not available	Not available	1
Idaho	6	8	..
Wyoming	..	1	12
Colorado	4	6	8
New Mexico	6	10	3
Arizona	2	6	6
Utah	..	2	6
Nevada	..	6	1
Pacific States			
Washington	2	3	3
Oregon	1	3	2
California	13	25	74
Territories and Possessions			
Alaska	..	..	2
Hawaii	..	1	10
Puerto Rico	9	9	..
Total	132	340	574

FOREIGN

Symposium Neuroradiologicum.—A Symposium Neuroradiologicum will be held in London, England, Sept. 13 to 17 at the University of London, Malet Street, W. C. 1. Radiologists, neurologists, and neurosurgeons particularly are welcome. The subjects for discussion include (1) cerebrovascular disease, (2) localization of intracranial tumors by means of isotopes, (3) applications of stereotaxometry, (4) new techniques, and (5) various preferred papers on a variety of neuroradiological subjects. Participants from the United States include: Dr. Harry A. Kaplan, Brooklyn, N. Y.; Drs. Juan M. Taveras and Fritz J. Cramer, New York City; Drs. William H. Sweet and Bertram Selverstone, Boston; and Drs. Frederick Murtagh and Ernest A. Spiegel, Philadelphia. A joint half-day session with the second International Congress of Neuropathology, meeting simultaneously in London, is projected. A social program has been arranged. Information may be obtained from Dr. R. D. Hoare, Secretary, Symposium Neuroradiologicum, The National Hospital for Nervous Diseases, Queen Square, London W. C. 1.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

American Medical Association Public Relations Institute, Drake *Hotel, Chicago, Aug. 31- Sept. 1.* Mr. Leo E. Brown, 535 N. Dearborn St., Chicago 10, Director.

American Association of Nursing Homes, Hotel Muehlebach, Kansas City, Mo., Sept. 19-21. Mr. Ira O. Wallace, P.O. Box 366, New Castle, Ky., Secretary.

American Association of Obstetricians, Gynecologists and Abdominal *Surgeons, The Homestead, Hot Springs,* Va., Sept. 8-10. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

American Congress of Physicial Medicine and Rehabilitation, Hotel Statler, Detroit, Aug. 28-Sept. 2. Dr. Frances Baker, 30 North Michigan Ave., Chicago 2, Secretary.

American Physiological Society Fall Meeting, Tufts College, Medford, *Mass., Sept. 6-9.* Dr. Allan C. Burton, Univ. of Western Ontario, London, Ont., Canada, Secretary.

American Veterinary Medical Association, Radisson Hotel and Auditorium, Minneapolis, Aug. 15-18. Dr. J. G. Hardenbergh, 600 South Michigan Blvd., Chicago 5, Executive Secretary.

Biological Photographic Association, Wisconsin Hotel, Milwaukee, Aug. 30-Sept. 2. Miss Jane H. Waters, c/o Pavelle Color, Inc., 533 W. 57th St., New York 19, Executive Secretary.

Montana Medical Association, Baxter Hotel, Bozeman, Sept. 15-18. Mr. L. R. Hegland, P.O. Box 1692, Billings, Executive Secretary.

National Medical Association, Los Angeles, Aug. 8-11. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

Nevada State Medical Association, Riverside Hotel, Reno, *Aug. 18-20.* Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

New England Health Institute, Colby College, Waterville, Me., Aug. 30-Sept. 1. Dr. Edward W. Colby, City of Portland Health Dept., Portland, Me., Chairman.

Pacific Dermatologic Association, Mexico, D. F., Mexico, Aug. 22-24. Dr. Ben A. Newman, 436 N. Roxbury Drive, Beverly Hills, Calif., Secretary.

Regional Meetings, American College of Physicians:

Jamestown, N. D., Sept. 10. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

Reno Surgical Society, Reno, Nev., Aug. 18-20. Dr. James R. Herz, 509 Humboldt St., Reno, Nev., Secretary.

Rocky Mountain Radiological Society, Shirley-Savoy Hotel, Denver, Aug. 18-20. Dr. John H. Freed, 4200 East 9th St., Denver 20, Secretary.

Society of General Physiologists, Marine Biological Laboratory, Woods Hole, Mass., Sept. 9-10. Dr. A. M. Shanes, National Institutes of Health, Bethesda 14, Md.

Southwestern Surgical Congress, Muehlebach Hotel, Kansas City, Mo., Sept. 5-7. Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secretary.

U. S. Chapter, International College of Surgeons, Convention Hall, Philadelphia, Sept. 12-15. Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago 10, Secretary.

Utah State Medical Association, Union Bldg., Salt Lake City, Sept. 8-10. Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2, Executive Secretary.

Washington State Medical Association, Olympic Hotel, Seattle, Sept. 11-14. Dr. Frederick A. Tucker, 1309 Seventh Ave., Seattle 1, Secretary.

West Virginia State Medical Association, White Sulphur Springs, Aug. 18-20. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: Part I, Sept. 6-7. Candidates may file applications at any time, but the National Board must receive them at least six weeks before the date of the examination. New candidates should apply by formal registration; registered candidates should notify the board by letter and forward their fees. Exec. Sec., Dr. John B. Hubbard, 133 South 36th St., Philadelphia 4.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* New York City, Oct. 23-27. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15.

American Board of Dermatology and Syphilology: *Oral.* Washington, D. C., Oct. 14-16. Final date for filing application was March 15. Sec., Dr. B. M. Kesten, One Haven Ave., New York 32, N. Y.

American Board of Internal Medicine: *Oral.* Portland, Ore., Sept. 14-16; Chicago, Nov. 30-Dec. 1. *Subspecialties. Cardiovascular Disease.* Chicago, Nov. 30. The closing date for acceptance of applications for gastroenterology was Feb. 1, and for cardiovascular disease the closing date was June 1. Exec. Sec., Dr. William A. Werrell, 1 West Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* New Haven, November. Oral examinations given in Spring and Fall. Final date for filing application for the Spring examination is October 1; for the Fall examination April 1. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

American Board of Obstetrics and Gynecology: Applications for certification for the 1956 Part I examinations are now being accepted. Final date for filing application is Oct. 1. Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Practical Examination.* Chicago, Oct. 9-14. Final date for filing application for 1955 practical examination was July 1, 1954. *Written.* January, 1956. Final date for filing application was July 1. *Practical Examination.* St. Louis, Oct. 20-25. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

American Board of Orthopaedic Surgery: Final date for filing application for the Part II examination to be given in January 1956 is Aug 15. Sec., Dr. Harold A. Sofield, 116 South Michigan Ave., Chicago 3.

American Board of Otolaryngology: *Oral.* Chicago, Oct. 3-7. Final date for filing application is April. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

American Board of Pediatrics: *Oral.* Chicago, Oct. 7-9; and Washington, D. C., Dec. 2-4. Admin. Sec., Mrs. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: *Oral and Written.* Philadelphia, Sept. 22-24. Corres. Sec., Miss Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

American Board of Preventive Medicine: *Certification in Public Health.* Kansas City, Mo., Nov. 10-12. Sec.-Treas., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore 5.

American Board of Proctology: *Part II.* Philadelphia, Sept. 17. Sec., Dr. Stuart T. Ross, 131 Fulton Ave., Hempstead, N. Y.

American Board of Psychiatry and Neurology: San Francisco, mid-October; New York City, December. Sec., Dr. David A. Boyd, 102-110 Second Ave. S.W., Rochester, Minn.

American Board of Radiology: Chicago, Dec. 4. Final date for filing applications for the fall examination was July 1. Candidates who will complete their training by Dec. 31 will be eligible to appear for this examination. Sec., Dr. B. R. Kirklin, Kahler Hotel Bldg., Rochester, Minn.

American Board of Surgery: *Part I.* Centers throughout the United States, in Europe and in the Far East, Oct. 26 and March 28. Closing date for the October examination was July 1 and for the March examination is December 1. *Part II.* Buffalo, Sept. 26-27; Chicago, Oct. 27-28; New York City, Nov. 14-15; St. Louis, Dec. 12-13; New Orleans, Jan. 16-17; Los Angeles, Feb. 13-14; San Francisco, Feb. 16-17; Durham, Mar. 12-13; Boston, May 14-15 and Philadelphia, June 4-5. Sec., Dr. John B. Flick, 255 S. Fifteenth St., Philadelphia 2.

The Board of Thoracic Surgery: *Written.* Various Centers, Sept. 9. Final date for filing applications was July 1. Sec., Dr. Wm. M. Tuttle, 1151 Taylor Ave., Detroit 2.

MAGAZINE–TELEVISION REPORT

The following list of current medical articles appearing in mass-circulation magazines on medical subjects is published each week only for the information of readers of The Journal. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles herein reported.*

MAGAZINES

Life, July 11, 1955

"Mental Illness: The New Hope"

In a full-page editorial, *Life* editors say that "signs of a double breakthrough (psychiatric treatment and new drugs) on our No. 1 disease justify a national effort." The editorial says the solution to the problem is not in building more hospitals. "It is in emptying the ones we have—by preventing new cases from developing and by getting the existing ones out." *Life* concludes: "the goals should be threefold—to train thousands of new psychiatrists to remedy the present inadequacy, to finance scores of low-cost psychiatric clinics where mental illness can be checked before it grows serious, and finally to finance much greater research into the whole field of mental chemistry."

U. S. News & World Report, July 15, 1955

"What You Should Know About Health," interview with Dr. Robert Collier Page

A past-president of the Industrial Medical Association answers questions on health problems of executives and employees. He points out that an industrial physician works closely with the family physician. He treats only in an emergency and refers executives and employees to private physicians when medical care is indicated.

American Legion Magazine, July, 1955

"Public Health Disgrace No. 1," by Caroline Bird

U. S. Public Health Service Veterinarian Dr. James H. Steele calls rabies "our number one public health disgrace." He urges action to eliminate the problem. According to the article, "the only way to wipe out rabies in the United States is to get 70 per cent of our dog population vaccinated and keep that percentage vaccinated by enforcing dog control laws."

Coronet, August, 1955

"X-Rays Can Be Dangerous," by Lydia Strong

Wilhelm Konrad von Röntgen's discovery of the x-ray in 1895 "revolutionized medicine." In spite of its great value, "The National Committee on Radiation Protection . . . points out forcefully the need for doctors 'to exercise great caution and restraint in the use of x-rays for diagnosis and the treatment of nonmalignant diseases.' " The article warns patients against demanding x-ray treatment and urges them to let the doctor decide whether radiation is necessary.

"The Newest Facts About Baldness," by Veronica L. Conley

Condensed from *Today's Health,* this article by the Assistant Secretary of the American Medical Association's Committee on Cosmetics points out that cures for baldness have one thing in common—"they fail to grow hair." She says "the physician's greatest task is usually assisting the young man to make an adequate adjustment to this cosmetic disturbance, with which he will have to live for the rest of his life."

"Ceiling of Hope," by Gerald Nelson

A nonprofit organization manufactures ceiling projectors and films for use in sickrooms and hospitals. In connection with this article, American Medical Association President Dr. Elmer Hess says: "The morale and mental well-being of a bedridden patient is of extreme importance. Any device that can while away the hours for a sick person—like the ceiling projector reported in this *Coronet* article—is indeed a blessing."

Saturday Evening Post, July 16, 1955

"Healing by High Frequency," by Milton Silverman

"Last year . . . it was estimated that more than 4,000 ultrasonic devices were being used in this country alone to treat several hundred thousand patients afflicted with a wide assortment of painful, crippling ailments of bones, joints and muscles. The sound beams . . . were rarely if ever curative in themselves, but combined with other forms of treatment and administered by skilled and experienced physicians, they were giving significant relief to many of the victims."

"How to Avoid Sudden Death," by Steven M. Spencer

In an article recommending the use of automobile seat belts, the author reports on the medical profession's active interest in this campaign. He quotes Dr. R. Arnold Griswold, chairman of the American College of Surgeons' Committee on Trauma, and Dr. Horace E. Campbell, chairman of the Automobile Safety Committee of the Colorado State Medical Society.

DEATHS

Adams, James Frederick, Catonsville, Md.; University of Maryland School of Medicine, Baltimore, 1894; died in the University Hospital, Baltimore, June 10, aged 85, of carcinoma of the prostate.

Andrus, Adellon Devilla ⊕ Ashland, Wis.; University of Colorado School of Medicine, Denver, 1912; served during World War I; at one time a medical officer of the Indian Service; died May 22, aged 72, of heart disease.

Armentrout, Charles Henry ⊕ Asheville, N. C.; Medical College of Virginia, Richmond, 1931; specialist certified by the American Board of Surgery; commissioned in the U. S. Naval Reserve during World War II and was awarded the Unit Citation and the Purple Heart; fellow of the American College of Physicians; on the staffs of the Memorial Mission and St. Joseph's hospitals; senior consultant in medicine at Veterans Administration Hospital in Swannanoa, N. C.; died in the Memorial Mission Hospital May 19, aged 47, of coronary thrombosis.

Bookmyer, Ralph Hugh ⊕ Detroit; Detroit College of Medicine and Surgery, 1915; fellow of the American College of Surgeons; served on the staffs of the Providence and Mount Carmel Mercy hospitals; died June 7, aged 71, of acute coronary thrombosis.

Braff, Max Mark, Boston; Boston University School of Medicine, 1917; served during World Wars I and II; member of the Massachusetts Medical Society; died in the Beth Israel Hospital June 7, aged 63, of cerebral hemorrhage.

Collins, George Robert, Avon, N. Y.; University of Buffalo School of Medicine, 1912; health officer for the town and village of Avon; served as a member of the board of education of Avon Central School and for many years its school physician; died April 27, aged 66, of coronary occlusion.

Cooper, John Steward Stevens, Lansdowne, Pa.; Jefferson Medical College of Philadelphia, 1891; died Feb. 18, aged 86, of carcinoma of the colon.

Doerann, August Frederick ⊕ Evanston, Ill.; Illinois Medical College, Chicago, 1906; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; died in St. Francis Hospital June 12, aged 75, of gastrointestinal hemorrhage and gastric ulcer.

Epstein, Jacob Israel ⊕ Cleveland; Tufts College Medical School, Boston, 1927; on the staff of the Crile Hospital; died in Ravenna May 6, aged 51, in an automobile accident.

Fayerweather, Rhoades, Kahuku, Hawaii; Johns Hopkins University School of Medicine, Baltimore, 1903; died Feb. 1, aged 77, of coronary occlusion.

Franks, Arthur Jr. ⊕ Harrisburg, Ill.; St. Louis University School of Medicine, 1950; interned at the St. Mary's Hospital in East St. Louis; died May 3, aged 39, of melanoma.

Gaebler, Arthur ⊕ St. Petersburg, Fla.; College of Physicians and Surgeons, Chicago, 1895; formerly practiced in Chicago, where he was on the staff of the Englewood Hospital; died May 15, aged 88, of hypertensive heart disease.

Greider, William Henry ⊕ Tulsa, Okla.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1911; died Feb. 28, aged 89.

Hartwell, Arthur Spear ⊕ Norwood, Mass.; Jefferson Medical College of Philadelphia, 1897; fellow of the American College of Surgeons; formerly medical examiner of Norfolk County; one of the founders of the Norwood Hospital; died Feb. 25, aged 85, of cerebral thrombosis.

Johns, William Alexander ⊕ Corinth, Miss.; Memphis (Tenn.) Hospital Medical College, 1894; formerly secretary of the Alcorn-Tishomingo Counties Medical Society; died June 7, aged 86, of carcinoma of the prostate.

Kilborn, Melville Graves, West Orange, N. J.; Jefferson Medical College of Philadelphia, 1930; member of the Medical Society of New Jersey; specialist certified by the American Board of Anesthesiology; member of the American Society of Anesthesiologists; on the staff of Orange Memorial Hospital; died in Livingston April 1, aged 51, of rheumatic heart disease.

Lum, Paul Albert, Whittier, Calif.; University of California Medical School, San Francisco, 1930; at one time health officer of Dos Palos; served during World War II; died in the Veterans Administration Hospital in Long Beach May 17, aged 53, of acute adrenal insufficiency, lobar pneumonia, and carcinoma of the stomach.

Lynn, Arthur Ray, Marshalltown, Iowa; State University of Iowa College of Medicine, Iowa City, 1905; past-president of the Marshall County Medical Society; on the staffs of the Evangelical Deaconess Home and Hospital and St. Thomas Mercy Hospital; died April 27, aged 71, of cerebral vascular accident with hemiplegia.

Mathews, William Joseph ⊕ Hoboken, N. J.; Medico-Chirurgical College of Philadelphia, 1900; for many years on the staff of St. Mary's Hospital; died May 31, aged 79, of arteriosclerotic heart disease.

Palmer, Robert Vickery ⊕ Avenue, Md.; University of Maryland School of Medicine, Baltimore, 1895; a trustee of St. Mary's Seminary Junior College, St. Mary's City; died in the University Hospital, Baltimore, Feb. 19, aged 83, of pneumonia.

Park, Irving Herman ⊕ Brookline, Mass.; Middlesex College of Medicine and Surgery, Waltham, 1937; served during World War II and won the Distinguished Service Cross; died in the New England Medical Center, Boston, May 30, aged 43, of cerebral vascular accident, thrombocytopenia, and acute myelogenous leukemia.

Payne, Redmond Wellington, San Francisco; Cooper Medical College, San Francisco, 1889; died April 18, aged 89.

Rivin, Henry Albert ⊕ Delano, Calif.; Jefferson Medical College of Philadelphia, 1919; served during World War I; died May 21, aged 58.

Robinson, W. Joseph ⊕ Creston, N. C.; University Medical College of Kansas City, Mo., 1904; died in the Ashe County Memorial Hospital in Jefferson April 26, aged 75, of heart disease.

Rost, Walter Franz H., New Paltz, N. Y.; Schlesische Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1923; honored with a presidential citation for his medical work with the local draft board; on the staffs of the Kingston and Benedictine hospitals in Kingston; died April 25, aged 55, of coronary thrombosis.

Savage, Philip Monroe ⊕ San Bernardino, Calif.; Cooper Medical College, San Francisco, 1907; fellow of the American Public Health Association and the American College of Surgeons; was superintendent of San Bernardino County Charity Hospital and on the staffs of St. Bernardine's and St. Bernardino County Charity hospitals; died May 31, aged 74, of carcinoma of the prostate.

Spann, Sylvester A., Meridian, Okla.; Meharry Medical College, Nashville, Tenn., 1914; died May 19, aged 73, of peritonitis.

Stephenson, George William ⊕ Coos Bay, Ore.; University of Oregon Medical School, Portland, 1951; interned at the Providence Hospital and served a residency at the University of Oregon Medical School Hospitals and Clinics in Portland; an associate member of the American Medical Association; died May 13, aged 38, as the result of an automobile accident.

Sullivan, Michael Joseph, Meriden, Conn.; Cornell University Medical College, New York City, 1900; formerly city health officer; on the staff of Meriden Hospital; died May 12, aged 78, of arteriosclerotic heart disease.

⊕ Indicates Member of the American Medical Association.

FOREIGN LETTERS

AUSTRIA

Phonocardiographic Changes After Operation for Mitral Stenosis.—At the meeting of the Society for Internal Medicine in Vienna on Feb. 17, Dr. W. Auinger reported that phonocardiograms made in eight patients with mitral stenosis before and after they had been operated on revealed characteristic changes that permitted evaluation of the operative success. These changes consisted of prolongation of the first heart sound and doubling of the interval between the first and second sounds, which after the operation were found to approach more nearly to normal. The respiratory curve proved to be a reliable aid in differentiating the mitral opening sound from a reduplication of the second heart sound and from the third heart sound, as it showed a change of the reduplication distance within the single respiratory phases but no change in the doubling of the interval.

Antihuman Globulin Deviation.—At the same meeting, Dr. C. Steffen stated that it is now possible to study with the aid of the Coombs test, the conglutination methods, the thrombocytes-Coombs test, and various methods of agglutination the occurrence of autoantibodies against erythrocytes, thrombocytes, and leukocytes. All these methods, however, use cell indicators, to which one binds the antigenic cell extracts, that indicate the course of an antigen-antibody reaction by an unspecific agglutination. Thus a reaction environment is produced that does not correspond with the immunobiological process in the body. Fixation of the antibodies in the tissue cells cannot be directly demonstrated by these methods.

The antihuman globulin deviation method, however, makes it possible to demonstrate in the same manner an antibody that has become fixed in blood and tissue cells, for example, an incomplete Rh-immune body in Rh-erythrocytes. The principle of this method consists in the incubation of lyophilized tissue or blood cells with a serum that is suspected to contain an antibody with a specificity against a substrate of the cells used. After incubation the cells are washed free from proteins under refrigeration, and the centrifuged cell pulp is mixed with a Coombs serum of known titer. After a certain deviation interval the mixture is centrifuged and the supernatant Coombs serum is retested for its activity. The testing of the activity of other Coombs' serum before and after the antihuman globulin deviation is made with O-Rh-erythrocytes that are loaded with a monovalent Rh-immune body of high titer. For control purposes incubation is always carried out with a normal serum in parallel with that of the serum obtained from the patient; the same amount of tissue substrate is incubated and subsequently a similar determination of the antihuman globulin deviation is made.

When antibodies are present in the serum, they saturate the tissue substrates in the course of the incubation. In a protein-free reaction environment the known antihuman globulin activity of the Coombs serum is reduced in the subsequent deviation by the fixed antibodies in the tissue substrate as a result of the human globulin property of these antibodies. This is shown by a loss of titer of the Coombs serum before and after the deviation by the experimental cells, while such a loss of titer does not occur in the control experiments with normal serum. The direct form of the method appears to be of such a type that with the cells of the patient himself an antihuman globulin deviation is carried out. The reliability of the method was first tested on erythrocytes that had been artificially saturated with incomplete antibodies, and the suitability of the method for demonstrating autonomous antibodies was ascertained. In immunothrombopenia and immunoneutropenia the antihuman globulin deviation method was tested and used successfully to demonstrate antithrombocyte and antileukocyte antibodies in the serums of patients. Lyophilized suspensions of thrombocytes and leukocytes were used as a saturated substrate.

In addition to Cavelti's experimental work, the antihuman globulin deviation was applied clinically to patients with polyarthritis and with rheumatic endocarditis. Control experiments showed that a lyophilized substrate is as efficient in producing saturation as a native substrate, and consequently the method can be used for routine diagnostic purposes. Mixtures of tissue from heart, muscle, capsular ligament, and cardiac and muscular tissues alone were used as substrates. Many serums obtained from patients with polyarthritis and rheumatism were studied and results showed an appreciable antihuman globulin deviation between the experimental and the control serum. This antihuman globulin deviation can be traced back only to the presence in the serum of rheumatic patients of a substance with the properties of human globulin that is specific with regard to the tissue used. This substance is believed to be an incomplete antibody. This concept has been confirmed by the results of absorption experiments. Furthermore the substance obtained from the serums of rheumatic patients, after being saturated specifically with the used substrates, could be broken off from the substrates, demonstrated in the eluates, and resaturated from the eluates on the substrates again. The antibody could be absorbed quantitatively from the serum of a rheumatic patient to the substrate that had been used for saturation. The serum, which had been taken off with a pipet after being saturated, behaved like a normal serum in the repeated saturation experiment.

It is concluded that the antihuman globulin deviation presents a method by which antibodies fixed to blood and tissue cells and the circulation of antibodies with a certain tissue specificity may be demonstrated in the serum. Because of the ease with which this method is carried out, it is suitable for routine diagnosis.

Resection of the Hip.—At a meeting of the Society of Physicians in Vienna Feb. 18, Dr. A. Sonnenschein emphasized that it is still too early for an evaluation of the plastic operation on the hip joint with the use of endoprostheses because of the possible later occurrence of deficiency of the used synthetic material or its limited bearing strength. Consequently resection of the head and occasionally also the neck of the femur and adjustment of the stump to the acetabulum is recommended. Follow-up examinations were made on 71 patients who underwent resection of the hip joint for chronic hip diseases. The results in 44 were good and in 27 poor. As compared with plastic operations on the hip joints using artificial epiphyses, the resection of the proximal end of the femur depends on the natural powers of healing, adjustment, and transformation.

Causes of Granulocytopenia.—At the same meeting Dr. H. Fleischhacker stated that the normal number of leukocytes depends on new formation in the bone marrow and the extent of the destruction in the peripheral blood. Central influences exert a regulatory influence. Granulocytopenias may be caused by impairment of the bone marrow; chemical, toxic, and infectious influences; and radium and roentgen irradiation. Among the forms of granulocytopenia characterized by a tumor of the spleen, the myeloscleroses with extramedullary formation of blood, hypersplenism, and splenic anemia must be distinguished. Differentiation is possible with the aid of sternal puncture and biopsy of the spleen. Granulocytopenias caused by allergic and autoimmune bodies are the result of a peripheral destruction of leukocytes. Leukocyte antibodies in a woman with cyclic agranulocytosis of five years' duration were demonstrated by blood transfusion into healthy persons and in vitro with the aid of leukocyte agglutination, the antihuman globulin test, and Finch's sedimentation test. The clinical manifestations improved markedly with splenectomy. Postoperatively menstruation was no longer associated with the occurrence of granulocytosis, but the granulocytes still showed the typical variations and the leukocyte antibodies remained unchanged. With regard to the treatment of agranulocytosis, transfusions of fresh blood are more

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The items in these letters are contributed by regular correspondents in the various foreign countries.

effective than those with preserved blood. After intramuscular injections of 10 cc. of cerebrospinal fluid obtained from healthy persons, pronounced leukocytosis may be produced in healthy persons and also in patients with granulocytopenias. This effect is mainly due to influencing the cell units by which leukocytes are broken up, thus prolonging the duration of life of the granulocytes in the circulation. In aplastic anemia and granulocytopenia the effect of blood transfusions can be greatly increased by also injecting spinal fluid, so that less blood is required and a prolongation of the effects may be achieved.

Surgical Closure of a Rectourethral Fistula.—At the meeting of the Austrian Society of Urology in January Dr. Uebelhör reported on the case of a man, 68 years of age, in whom a rectourethral fistula had developed after a prostatectomy. An abscess that was located on the dorsal side of the abdomen had been opened during the prostatectomy. A colostomy was made shortly after the prostatectomy, and only then did the extremely poor condition of the patient improve. Six months later the patient returned to the hospital for closure of the fistula. At this time a calculus the size of a plum stone was found in the posterior urethra, which intermittently closed the fistula. The surgical approach was through the perineum. The urethra was separated from the rectum, and the calculus was removed following dilation of the urethral fistula. Both fistular openings were sutured after the interposition of the levator. Several months later the colostomy was closed, and the patient has remained well.

BRAZIL

Intestinal Giardiasis.—The pathogenic significance of Giardia lamblia is still a matter of controversy. Although eminent gastroenterologists and parasitologists believe this parasite to be pathogenic in only a few children and adults, a growing number of pediatricians regard Giardia as a frequently pathogenic protozoan in children. Profiting by a relatively high incidence of giardiasis (11% in children under 15 years of age) in Porto Alegre, Dr. Estelle Budiansky reported in *O Hospital* (45:555, 1954) on a series of 117 children under 14 years of age whose stools showed Giardia (in almost all of these in the form of cysts). Asymptomatic carriers in childhood seem to be rare (only two in this series). The most common symptoms found in these children were repeated diarrhea, recurrent abdominal pains, loss of appetite, nausea, vomiting, and malnutrition. The celiac syndrome and such nervous symptoms as irritability, headache, dizziness, and disturbed sleep may be associated with giardiasis. The partial or total relief of the symptoms after treatment with an acridine derivative (Metoquin), coinciding with the disappearance of the parasites from the feces in 90% of the patients, suggests a causal relationship, although several other factors might have caused the symptoms and Giardia may have had only an aggravating effect. The author concludes that, whenever a child presents one or more of the symptoms mentioned and the stools are repeatedly positive for Giardia, the child should be treated with Metoquin, even in the presence of other causative factors. Whenever a child presents one or more of the symptoms mentioned and the stools are repeatedly negative, duodenal catheterization should be performed, and if this does not clarify the diagnosis treatment for giardiasis should be given.

Peridural Anesthesia.—Dr. Nelson Sá Earp, of the Santa Theresa Hospital of Petropolis, Rio de Janeiro, at a meeting of São Paulo surgeons, reported a series of 1,700 patients in whom peridural anesthesia was used. Among the advantages of this method are its safety; there were no deaths in this series. Death as a consequence of peridural anesthesia is only caused by technical errors, such as injecting the anesthetic solution into the intradural space. The absence of deaths, however, does not mean absence of minor accidents. Lipothymia occurred in about 7% of these patients. When it occurs, it comes at the end of the injection, causing a relaxation of the muscles and the drooping of the patient, as about 99% of the injections are made with the patient in the sitting position. If he is not laid down on the bed immediately a convulsive crisis develops. The reaction is believed to be due to cerebral ischemia, owing to the sitting position and emotional instability. For this reason Dr. Earp uses preanesthetic psychic preparation and thereby markedly reduces the rate of occurrence of this reaction. Patients in shock or with massive hemorrhage have been subjected to peridural anesthesia without any harmful effect; on the contrary, with the cessation of the pain the shock may be decreased. Another possible accident is the apnea caused by paralysis of the intercostal muscles, which occurred in two of the author's patients. In one of them artificial respiration had to be maintained for about 30 minutes. During this time the heart worked normally, and the patient recovered completely. The second patient was a cachectic older man in whom a gastroenterostomy had to be done. Artificial respiration was all he needed to recover completely, permitting the completion of the operation.

Death During Anesthesia.—Dr. F. F. Brusarosco in *Anais paulistas de medicina e cirurgia* (68:459, 1954) reported a series of 16 patients who died during anesthesia among 235 persons subjected to 242 thoracic operations. Only one of them was unconscious before the beginning of the anesthesia. The series included 48 operations on the heart and great vessels, 41 exploratory thoracotomies, 41 pneumectomies, 38 esophagogastric resections, 32 lobectomies and segmentectomies, 8 pulmonary decortications, 8 exereses of mediastinal tumors, 6 closures of bronchocutaneous fistulas, and 20 other operations such as vagotomies, sympathectomies, and extraction of foreign bodies. In the age group from birth to 19 years there were 51 patients with 6 deaths; in the group from 20 to 49 years, 135 patients with 8 deaths; and in the group over 50 years old, 49 patients with 2 deaths. Thus half of the deaths occurred in the group of better-risk patients, possibly because in the group over 50 years old many of the operations were limited to a simple exploratory thoracotomy, owing to the fact that the disease had reached an inoperable stage. The type of anesthesia used was as follows: cyclopropane-ether-curare 85 with 6 deaths, cyclopropane-ether 63 with 4 deaths, cyclopropane-nitrous oxide-curare 2 with 2 deaths, nitrous oxide-ether-curare 20 with 1 death, nitrous oxide-pentothal-curare 10 with no deaths, nitrous oxide-meperidine-curare 4 with no deaths, and nitrous oxide-intravenous procaine-meperidine-curare 58 with 3 deaths. The author believes that the type of anesthesia or the agent used was not the cause of the death but rather its injudicious use in the hands of insufficiently experienced anesthetists. Among 84 patients with uncontrolled or partially controlled respiration 9 deaths occurred; among 82 patients with the respiration controlled only during the intrapleural part of the operation 4 deaths occurred, and among 76 patients with controlled respiration throughout the operation 3 deaths occurred. Maneuvers that proved to be particularly dangerous included (1) placing the patient in the supine position, this procedure having caused a severe shock in 19 patients, with 2 deaths; (2) the changing of the endotracheal catheter during tracheotomy, which was tried in 2 patients, both of whom died; and (3) operative exploration of the mediastinum, which, performed in 9 patients, caused the death of 2 from intractable cardiac standstill.

ENGLAND

Annual Report of Council of the British Medical Association.—The annual report of the Council of the British Medical Association in the *British Medical Journal* (Supp., March 19, 1955) reports that, after the Minister of Health's statement that physicians would be asked not to prescribe certain proprietary preparations in cases where it had not been possible to reach satisfactory price arrangements with the manufacturers, the Council obtained an assurance from the Ministry that the Minister's announcement in no way departed from the agreed policy that a general practitioner is quite free to prescribe whatever he decides to be necessary in the best interests of his patient. The Council believes that it is unfortunate that the Minister opened his campaign by referring to a group of well-known proprietary antiasthmatics that, though more costly, were often more efficacious and better tolerated than the supposedly equivalent standard preparation.

Attention was drawn to the fact that, although now there is at least one general practitioner on every regional hospital board, the position with regard to teaching hospitals is far from satisfactory. For instance, in London on only 6 of the 12 boards of governors of teaching hospitals is a general practitioner included among the members. Steps are to be taken to remedy this state of affairs. Satisfaction was expressed at the financial success of *Family Doctor*, the popular health journal of the association. For the second year in succession it has been run at no cost to the association. *Family Doctor* has become the most widely quoted magazine in Great Britain.

In view of the large number of serious and fatal accidents in which motorcyclists receive head injuries, the Council has been trying to persuade the Commissioners of Customs and Excise to withdraw the purchase tax payable on crash helmets. It is estimated that only about 20% of civilian motorcyclists wear crash helmets. The membership of the association in the United Kingdom represents 71% of the total profession and 80% of the working profession. The Anglo-American and Anglo-Canadian Exchange Scheme, which enables a small number of physicians to visit the United States and Canada in exchange for visits to this country by American and Canadian physicians, has been continued. Five British physicians have visited the United States and Canada during the year.

The Council of the World Medical Association has reported to member-associations that the association is in serious financial difficulties, and it has proposed a substantial increase in the rate of subscription. The difficulties are mainly caused by the widening scope and increasing cost of its activities and by the fact that many national associations do not pay their full membership subscription. The British Medical Association Council has carefully considered how it can best help the World Medical Association. It is convinced that this organization serves a necessary purpose in presenting the views of the medical profession to international governmental bodies such as the World Health Organization and the International Labour Office, and, moreover, as the British Medical Association was largely responsible for the creation of the World Medical Association, the Council believes that it must do all in its power to ensure the World Medical Association's continuance. The Council has accordingly made an unconditional gift of £1,000 to the World Medical Association to help it over its immediate difficulties. It has also studied the World Medical Association's financial statements with a view to offering constructive advice. It has suggested to the World Medical Association Council that the crisis is serious enough to justify an immediate and thorough examination of its finances, organization, and activities and that, after effecting such economies as are practicable, its council should work out a program of activity within the revenue that it can reasonably expect to receive. It has recommended that the proposed increased rate of subscription should be reconsidered, partly because, if certain member-associations do not pay their full subscriptions even at the present rate, it is unlikely that they will pay any substantially higher rate.

Mass Radiography.—In Birmingham an x-ray service for general practitioners was inaugurated in 1949. A mass radiography center was established in an old building in the center of the city. Although no advertisement of the facilities appears in the press and there are no evening or Saturday morning sessions, during the five years about 11,000 persons voluntarily requested a roentgenogram of the chest. Dr. L. A. McDowell has published an analysis of the 3,371 persons (1,460 men and 1,911 women) who came to the center of their own accord during the 12 months, March, 1953, to February, 1954 (*Tubercle* 36:122, 1955). Although there were 14 persons under the age of 15 and 94 aged 60 or over, 68.5% were in the age group 15 to 34. In spite of the fact that in Birmingham chest x-ray facilities are readily available to physicians, 20% of those attending of their own accord were under the care of a general practitioner at the time. Just over 50% wanted the roentgenogram made as a routine check. Most of these were not under the care of a physician. A somewhat smaller number wanted a roentgenogram made because of symptoms; more than half of these were not under the care of a physician. The rest wanted a roentgenogram made because of contact with tuberculosis; most of these were not under the care of a physician.

Of the 3,371 persons examined, 63 had radiological evidence of pulmonary tuberculosis; 18 had healed calcified lesions; 9 had healed fibrotic lesions; and 36 were referred for further investigation. Of these 36 persons, 22 had active tuberculosis. This gives an incidence of active tuberculosis of 6.5 per thousand for the group, compared with the national finding for mass radiography examinees of 3 per thousand. Of these 22 active cases, only 2 patients were without symptoms, and 10 were in the age group 15 to 24. What is described as "the startling finding in this group of active cases" is that 16 patients had tubercle bacilli in the sputum. In 11, cavitation was clearly shown in the roentgenogram. The author concludes that patients with pulmonary symptoms should be encouraged to visit their family physicians and that all of them should have a roentgenogram of the chest. For many of them all that is required is a routine roentgenogram, and this can be most economically provided by a modification of the present mass miniature radiography service, whereby general practitioners are given free access to such facilities. The symptomless person who wants a routine check-up should also have the opportunity of having it at a mass radiography center without first consulting his physician. On the other hand, persons with symptoms should consult their physicians before being x-rayed.

More Patients than People.—According to the chairman of the London Executive Council of the National Health Service, before long there may be more people on London physicians' lists than there are inhabitants in the London County Council area. This is attributed to lack of identifying details and change of name. As an example of the difficulties encountered, a physician in the east end of London has a list containing more than 100 people named Singh, four of them with the first name, Piara. In India Piara Singh is as common as John Smith in the United Kingdom.

Effects of Nuclear Explosions.—The Minister of Health said that the total amount of radiation received by each resident in the United Kingdom is about 0.03 r, about one-third of the American figure. Even this amount is artificially high because it is calculated on the assumption that a man stands outside in the open for 24 hours a day for about 50 years, and because it also assumes that none of the activity weathers away from the surface of the ground. The dose of radiation that has been agreed on by an international commission as a maximum permissible level for workers on radioactive isotopes or for radiologists is 0.3 r per week or, taking working hours and holidays into account, about 15 r a year. Where a large population has to be considered, however, the number of genes at risk is greatly increased, and the number of matings that might conceivably carry harmful genes is also much increased. Estimates of the dose of radiation over a generation that is likely to double the spontaneous mutation rate have varied from 3 to 300 r. About 50 r in 25 years is as good an estimate of the upper limit of allowable exposure as can be made at present. Research in genetic changes is inevitably slow, but it is most unlikely that the increase in radioactivity that has occurred so far will have any appreciable genetic effect. Another government spokesman said that the use of atomic energy for civil purposes cannot possibly raise any danger to the public health. A slightly less reassuring attitude is adopted in an editorial of the *British Medical Journal* (March 26, 1955, p. 775), which concludes that we know far too little on this important subject and that an intense study of it is urgently needed. Although the radiation dose from the nuclear explosions carried out so far is too low to have caused much genetic damage, a continuation of the tests at the present scale over a period of many years might constitute a serious genetic hazard.

Sugar and Dental Caries.—Evidence that increased consumption of sugar has no significant effect on the development of dental caries in children is to be found in a report recently published under the aegis of the Medical Research Council (King, J. D.; Mellanby, M.; Stones, H. H., and Green, H. N.: The Effect of Sugar Supplements on Dental Caries in Children, Medical Research Council Special Report, no. 288). The report is based on a carefully controlled investigation of over 700 children, aged 2 to 14 years, in institutions in London, Liverpool, and Sheffield. The children were first observed for one year on their regular diet, in order to ascertain the natural caries increase. They were then divided into control and test groups; the latter were given an additional supplement of refined or raw sugar for periods of one to two years; and the incidence of caries was assessed in both groups at the end of this time. It was found that the children in Liverpool and Sheffield, whose ages ranged from 3 to 14 years, were receiving 466.5 to 730.9 gm. (15 to 23.5 oz.) of sugar a week in their regular diet. During the period of observation those in the test groups received a supplement of 684.3 gm. (22 oz.) of refined sugar per week. As the children in the London groups were aged only 2 to 4 years, and as their normal sugar intake ranged from 388.8 to 715.4 gm. (12.5 to 23 oz.) a week, it was decided that they would not be able to cope with a further 684.3 gm. a week. It was therefore decided that those in the control groups should receive about 342.1 gm. (11 oz.) a week, and those in the test groups were given 684.3 gm. of either white or brown sugar a week.

The results demonstrate that relatively great differences in the total sugar content of the diets of children in institutions had no significant effect on the initiation and spread of dental caries in periods of one to two years. As regards the deciduous teeth, there was, as a whole, no evidence that sugar as administered in this investigation resulted in any increase in caries. In the case of the permanent first molars, although the groups fed additional sugar tended to show a slightly greater increase in, and spread of, caries than the control groups, the total figures for these teeth did not disclose any consistently significant differences. A comparison of the London children receiving supplements of sugar showed a caries experience in those receiving brown sugar similar to that of those receiving white sugar and the controls.

Aging and Mental and Physical Capacity.—Prof. William Hobson in the May issue of the *Practitioner* states that in a random sample of old people living at home, 43% had a resting diastolic blood pressure of 100 mm. Hg or over and most of these were in good health. There is some evidence that the increasing deafness, especially for higher tones, that commonly increases with age may be due to acoustic trauma in industry. Although deafness is more common in elderly men, vertigo is more common in women, probably associated with arteriosclerosis of the labyrinth. The power of accommodation falls steadily with age until the age of 50, after which it remains stationary. The range of normality of serum alkaline phosphatase, serum cholesterol, and blood urea are all much higher than in younger age groups. In a series of 98 elderly men the range of serum cholesterol was 176 to 409 mg. per 100 ml. (mean 268); the corresponding figures for a series of 141 elderly women were 200 to 481 (mean 310). On the other hand, serum calcium, blood sugar, and hemoglobin levels appear to be little changed with age. In a random sample of relatively healthy people over pensionable age living at home (191 men and 282 women), about 29% of the men and 45% of the women suffered from some pathological condition that impaired mobility. Most of this was due to cardiovascular disease (48% of those disabled), joint conditions (13% of those disabled), and chronic bronchitis (13% of those disabled).

The available evidence lends no support to the idea of fixing 65 years of age for retirement from employment. One great need at the moment is for more refined tests that will measure intellectual capacity in the aged. The present tests do not measure many of the higher mental abilities, tend to discriminate against the elderly, and take no account of difficulties due to such physical disabilities as deafness and tremor. He notes that the retiring age for professors at Edinburgh University is 70, and at Oxford and Cambridge it has just been raised to 67. He concludes by suggesting that "perhaps one of the reasons why old ladies live so much longer than old men is that they never retire."

Welfare State.—In an address on the role of the individual in health service delivered before the British Hospitals Contributory Schemes Association, Lord Beveridge, author of the scheme on which the National Health Service is based, drew a sharp distinction between the "welfare state" and the "welfare society." He does not like the former term because "it gives to some people the idea that all that they need for welfare should be provided by the State and that all they have to do is to use their votes to get it from the State." He prefers the term "welfare society" because, although some things must be done by the state, much more has to be done by private citizens for themselves and in helping their neighbors. He gave some striking figures for the progress that the British Hospitals Contributory Schemes Association has made. The essence of these schemes is that people contribute in order to obtain certain benefits for themselves and their families over and above those available through the National Health Service. There are now 39 contributory schemes, with more than 3,500,000 members paying contributions ranging from 1 to 7 cents a week and producing a total annual income of 6,300,000 dollars. The contributors with their dependents number about 10 million people, or about 20% of all the people in Britain. This is an outstanding example of voluntary action refusing to be eradicated by a welfare state.

Accidental Poisoning.—According to the Registrar General's Statistical Review of England and Wales for 1951, in the period from 1931 to 1939, 130 children under 15 years of age died as a result of accidental poisoning. The comparable figure for the next decade was 277. In each period 79% of all the deaths occurred among children between 1 and 5 years. Deaths from aspirin poisoning in the two periods were 3 and 13, respectively, from ferrous sulphate and Fersolate 2 and 17, and from methyl salicylate 7 and 24. If all poisons and medicaments had been kept out of reach of these children, these deaths could have been prevented. In 1951, 820 people died from accidental poisoning; 264 from poisoning by solid and liquid substances; and 556 from poisoning by gas and other vapors. These figures are higher than in any of the preceding 10 years. Barbiturates were responsible for 117 of these deaths, compared with 33 in 1942; aspirin and salicylates were responsible for 27, compared with 10 in 1942, and other analgesics and soporifics for 21 (the same number as in 1942). Accidental poisoning occurred more commonly in the home than anywhere else: 50% involving barbiturates, 68% aspirin, and 82% other drugs.

Accidents in the Home.—An analysis of home accidents in England and Wales by C. A. Boucher (*Month. Bull. Min. Health* **14:** 49, 1955) shows that during the last 10 years 57,413 people have died as a direct result of an accident in the home, including about 10,000 children under 5 years of age. An analysis of the 1953 figures shows that 12% occurred in the age group from birth to 4 years, 2% from 5 to 14 years, 6% from 15 to 44 years, 11% from 45 to 64 years, and 69% 65 years and over. In other words, four-fifths of the fatal domestic accidents occur in children under 5 years of age and in people aged 65 and older. In children between the ages of 1 and 4 years, a fatal home accident is the third largest cause of death; the peak period of risk is during the third year of life. The most frequent types of fatal home accidents are: falls (60%), burns and scalds (10%), coal gas poisoning (10%), suffocation (9%), and poisoning (9%). An examination of the trend of these fatalities over recent years shows an increasing number of fatalities in older persons, an increasing number of deaths from falls, coal gas poisoning, and other poisoning, and a decrease in the number of deaths from suffocation and scalds.

Salmonella in Liquid Egg.—The Public Health Laboratory Service has published a report of an investigation to assess the importance of liquid egg as a possible vehicle of infection (*Month. Bull. Min. Health* **14:**65, 1955). Salmonella typhimurium and S. thompson are responsible for many cases of food poisoning. Of 1,649 samples of untreated or chilled liquid hen egg tested, 5 contained S. typhimurium, 3 contained S. pullorum, and 1 contained S. meleagridis. Of 65 samples of untreated or chilled liquid hen and duck egg mixture tested, 4 contained S. typhimurium. S. typhimurium was also isolated from 7 of 345 samples of frozen hen egg, from 1 of 59 samples of frozen duck egg, and from 17 of 55 samples of frozen hen and duck egg mixture. Of 106 samples of untreated or chilled imported hen eggs tested, one sample of an Irish mixture contained S. pullorum. One hundred fifteen samples of frozen imported hen eggs were tested. Of 80 Australian samples, 2 contained S. typhimurium and 15 S. pullorum. Of 25 Chinese samples, one contained S. thompson; and of one Danish, one Dutch, and eight Irish samples, none contained Salmonella organisms.

Sale of Sex Hormones.—Some time ago, in view of reports of the misuse of sex hormones for the suppression of lactation and the treatment of menopausal conditions, the British Medical

Association approached the Council of the Pharmaceutical Society to discuss whether any control should be imposed on their distribution and an inquiry was made as to the practice of dispensing such products without a prescription. As a result the council will advise pharmacists not to supply sex hormones or their preparations unless satisfied that the customer is obtaining them on medical advice, though not necessarily presenting a prescription. This does not apply to cosmetic preparations containing hormones which are being considered separately. The pharmaceutical journal, *Chemist and Druggist* (April 16, 1955, p. 433), says that the issue of such statements is attended by more evils than it is intended to reduce and should not be resorted to even for so laudable a purpose as to please the British Medical Association. There is no halfway house between control and noncontrol.

Sir David Bruce.—The centenary of the birth of Sir David Bruce has been commemorated by a special number of the *Journal of the Royal Army Medical Corps* (April, 1955). This contains a bibliography of his 170 publications. Bruce began his study of medicine at the University of Edinburgh at the age of 21 and graduated in 1881. In August, 1883, he received a commission in the Army Medical Service, and seven months later he was assigned to Malta, where he carried out his pioneer investigations on undulant fever. His first two papers announcing the discovery of what we now know as Brucella melitensis were published in the *Practitioner* (39:161, 1887; 40:241, 1888). In 1894 he was assigned to South Africa, where he began investigations that lead to the discovery of the trypanosome responsible for trypanosomiasis in man and animal and its mode of transmission by the tsetse fly. During World War I he completed his major contributions to medical knowledge by his work on trench fever and tetanus. He was the first Army medical officer to be elected a fellow of the Royal Society of London.

Price of Pharmaceuticals.—The Ministry of Health has just completed an investigation into the earnings of secondary manufacturers, compounders, and wholesale distributors of drugs. The investigation was based on a sample of 19 companies with an annual turnover of about 67,200,000 dollars, and the accounts for three successive financial years were examined. In a letter to the Association of British Pharmaceutical Industry, the Ministry states that the results of the cost investigation do not suggest that the general level of prices that manufacturers receive for unbranded standard drugs and preparations is excessive and that there is no occasion for health departments to seek to influence the level of prices received by manufacturers for unbranded standard drugs and preparations or the earnings that are being obtained in wholesale distribution.

Loneliness and Mental Health.—In Edinburgh, admission to mental hospitals are higher among people from the Highlands or from foreign countries than among the Edinburgh-born, according to Prof. F. A. E. Crew in an address to a conference on preventive aspects of mental health work. This is in line with evidence from the United States, Norway, and London that admission rates to mental hospitals are appreciably higher among immigrants than natives and among the unmarried, the widowed, and the divorced than the married. He concluded that the common factor is loneliness or cultural isolation. If mental health is to be preserved, a person should be attached to something that gives a satisfying purpose to his activities and yields security.

Industrial Museum Renamed.—The Industrial Museum of the Ministry of Labour has been renamed the Industrial Health and Safety Centre. The Centre, the only one of its kind in Great Britain, is a permanent exhibition of methods, arrangements, and appliances for promoting safety, health, and welfare in industry. It is open daily, free of charge, and guides are always on duty to conduct parties of visitors and to answer questions. In 1953 there were over 12,000 visitors. The name was changed because of the increasing emphasis that is now laid on industrial health. The Centre, which has a unique and up-to-date collection of exhibits, many lent by manufacturers, deals with industrial diseases, first aid, safety devices, lighting, ventilation, sanitation, and decorating of factory premises.

Neglect of Smallpox Vaccination.—The Minister of Health has expressed concern at the current neglect of vaccination except as an emergency measure during outbreaks of smallpox. The present position is that in England and Wales, in 1954, only 34.5% of the infants under the age of one year were vaccinated. This is far below what may be regarded as satisfactory. It is urged that every healthy infant be vaccinated. The revaccination of children within two or three years of first entering school not only maintains or revives their individual protection but also facilitates the control of local outbreaks of smallpox. It also insures that any further vaccination in later life will be less likely to have any serious reactions or complications.

Army Pathology Service.—The centenary of the Army Pathology Service is being celebrated by a special dinner at the Headquarter Mess of the Royal Army Medical Corps at Millbank, London. After the Crimean War Florence Nightingale urged the formation of an Army medical school, but it was not until 1860 that this was finally opened. Among the notable names associated with the school were those of Wright, Bruce, Leishman, and Cummins. Fundamental work on the cause and prevention of Malta fever, the isolation of the causative organism of kala-azar, and the work in Uganda on African sleeping sickness, culminating in the discovery of the causative organism, was done by members of the staff.

Poliomyelitis in an Isolated Community.—The simultaneous isolation of two immunologically distinct types of poliomyelitis virus from a single sample of feces obtained from a healthy one-year-old child is reported by Macrae and Shepherd (*Month. Bull. Min. Health* 14:55, 1955). In all, 73 samples of feces from residents of a relatively isolated community in Scotland were investigated, and this was the only successful isolation of poliomyelitis virus. The viruses were fully virulent when inoculated intracerebrally into monkeys. Poliomyelitis had not been diagnosed clinically within living memory in the community in which the child lived.

Radioactive Sterilization of Food.—During investigations (Food Investigation Special Report no. 61) in which foods were irradiated with 2 mev., it was found that, when the food was subjected to a dosage sufficient for efficient sterilization, changes in flavor, color, or texture nearly always occurred. Although these effects could be minimized with the use of special techniques such as deaeration or freezing of the food before irradiation, they could not be completely eradicated. The results of these experiments make it seem doubtful that sterilization of food by these means will prove commercially satisfactory.

Physician as Postmaster-General.—Among the changes in the Cabinet announced by Sir Anthony Eden on his appointment as Prime Minister was that of Dr. Charles Hill as Postmaster-General. Until his election as a Member of Parliament, Dr. Hill was Secretary of the British Medical Association.

FRANCE

Smallpox.—The epidemic that raged over France from the end of 1954 to the beginning of 1955 originated chiefly in Vannes, the capital of Morbihan. It was started by a soldier on leave from Saigon who was vaccinated a month before coming back to France and did not present any sign of the disease. A prefectorial decree made it compulsory to send smallpox patients to a hospital for isolation. Such severe forms as confluent smallpox, hemorrhagic smallpox, and variolar nephritis were observed in this epidemic. Abortive forms were common in those who had been vaccinated shortly before acquiring the disease or during the incubation period. Fifteen of the 70 patients in this epidemic died. Most of these were sick or infirm before they acquired smallpox. Compulsory vaccination proved to be the most effective measure used to stop the epidemic. Immunization of the staff in the hospital and the physicians proved insufficient as five hospital workmen, two interns, and seven physicians contracted the disease. One physician who was revaccinated in 1942 and again on Jan. 3, 1955, died 48 hours after his first contact with a smallpox patient. A revaccination of the staff in the hospital and of all physicians every three years is recommended.

Electrophoretic Variations in Serum.—G. Lagrue in the *Vie Medicale* for Dec. 12, 1954, shows that early in some acute infections such as pneumonia there is an increase in the alpha globulin; in some subacute infections such as tuberculosis and typhoid the gamma globulin increases. In the course of tuberculosis and acute articular rheumatism an increase in alpha globulin occurs. In a patient with pulmonary tuberculosis an increase in gamma globulin is associated with a bad prognosis. In lipid nephrosis there is a decrease in serum albumin and gamma globulin and an increase in alpha globulin. All nephropathies with marked albuminuria are associated with an increase in alpha globulin. In cirrhosis of the liver there is a decrease in alpha globulin but a marked increase in beta and gamma globulin. Arterial atheroma is associated with a moderate increase in beta globulin.

Regeneration of Tissue in Man.—Prof. R. Leriche in the *Bulletin of the International Society of Surgery* for January, 1955, stated that scar tissue can impede tissue regeneration. For example, in the case of nervous tissues the myelinic or amyelinic nerve fibers pervade the scar and this anarchic proliferation gives way to a neuroma. Although regenerative potential is present, it is vitiated. In bone, osteogenic cells may remake an epiphysis or a diaphysis, but the regeneration is functional and not anatomic. It is impossible to remake a joint but we can ossify the ligamentous insertions. The author concludes that tissues make a great effort toward regeneration but that it is often frustrated.

Death of Professor Gougerot.—Prof. H. Gougerot, the famous dermatologist, died at the age of 64. He contributed studies of sporotrichosis, cutaneous tuberculosis, leprosy, and the role of allergy in eczema.

INDIA

Tuberculous Ulcer of the Stomach.—M. S. Kanvinde in the *Indian Practitioner* (8:309 [March 3] 1955) stated that tuberculous ulcers of the stomach are rarely found in spite of the high incidence of pulmonary tuberculosis. A 20-year-old man came to the hospital complaining of pain in the epigastrium of one year's duration. The pain had become progressively worse and usually followed the ingestion of food. It was relieved by vomiting. There was no history of hematemesis or melena. There was tenderness on deep pressure in the right side of the epigastrium. Clinically there were no signs of pulmonary tuberculosis. The sedimentation rate was 110 mm. Stools showed the presence of cysts of Endamoeba histolytica. Gastric analysis showed marked hyperchlorhydria with 90 units of free hydrochloric acid and 100 units of total acidity. The tuberculin test with old tuberculin (OT) 1:500 was negative. A gastrointestinal series revealed a hyperplastic stomach. The duodenal cap filled with difficulty. After 8 hours the stomach was half full; after 24 hours it was one-fourth full. A radiological diagnosis of pyloric stenosis was made. A roentgenogram of the chest showed a soft opacity in the infraclavicular region bilaterally.

On operation, the pyloric end of the stomach was seen to be markedly thickened. Regional lymph nodes were enlarged and palpable. Pyloric carcinoma was suspected and a partial gastrectomy was performed removing the thickened portion and the lymph nodes. Recovery after operation was uneventful. The specimen showed two irregular ulcers in the pyloric region on the anterior and posterior walls situated almost opposite each other. The floor of the ulcers was covered with necrotic material. The borders of the ulcer were swollen and irregular. The serosal surface did not show any tubercles. On section the regional lymph nodes showed soft yellow-gray areas of caseation. Histological examination of the ulcer margin showed a thickened mucosa infiltrated with lymphocytes forming several tubercular follicles with epithelioid cells and Langhan's type of giant cells. The ulcer crater was deep and lined by granulomatous tissue consisting of epithelioid cells and giant cells. The base of the ulcer did not show any fibrous tissue. Lymph nodes had the characteristic appearance of tuberculous lymphadenitis. No acid-fast bacilli were seen.

Treatment of Leprosy.—S. Sinha in the *Indian Journal of Medical Sciences* (9:124 [March 3] 1955) reported the treatment of 700 persons with leprosy, 25% of whom had the nodular type of the disease (nine of these had a positive lepromin reaction with ocular involvement); 15% had the neural type (five of these had polyneuritis with trophic ulcers); and 60% were of the mixed type. Cutaneous biopsy was positive for Mycobacterium leprae in 60% of the patients and 30% were diagnosed on clinical findings only. The sedimentation rate varied between 15 and 60. The treatment consisted of streptopas, vitamin B, Thiosemicarbarsone, and iron preparations. Erythrocyte counts and hemoblobin estimations were done every eighth week. A diet consisting of plenty of milk, fruits, and proteins was advised. All patients were encouraged to continue their vocation. Measures were taken to prevent spread in the family. Other members of the family, especially children, were given BCG vaccination. Resolution in nodular lesions was found to commence after the 10th injection of streptopas, and the improvement continued in varying degree in most patients. Some required a second course of streptopas after a rest of one month. The improvement in patients with the neural type was very satisfactory but in those with the mixed type the clinical response was variable. Perforating ulcers were the quickest to respond to this treatment. Keratitis and iridocyclitis showed a better response to this therapy than to that with other drugs. Bleeding from the nose and ulcers in the nose responded quickly and completely. If cutaneous and nasal smears could be done, reduction in the bacilli in the cutaneous smears from 200 to 300 organisms per field to 2 to 10 per field was observed within 130 days. Nasal smears were found to be negative after the third injection. Toxic reactions were not common. More recently it has been found that streptotibine gives better results.

Serpasil and Coagulation of Blood.—M. G. Khirwadkar in the *Indian Journal of Medical Sciences* (9:160 [April 4] 1955) stated that about 14 alkaloids have been isolated from the root of Rauwolfia serpentina. The empirical formula of reserpine, one of these, differs markedly from that of the rest. In common with the whole root it produces hypotension, bradycardia, and sedation. A 32-year-old man was admitted to a hospital for malignant hypertension. He was given two tablets of reserpine and 30 mg. of phenobarbital three times daily. After about three weeks, venesection was performed to relieve dyspnea. The next morning it was noticed that the blood removed from the patient's vein the evening before had not clotted. In order to find out whether the delay in clotting was due to the action of the drugs the patient was receiving, 5 cc. of blood was removed from 12 other patients in the ward who were not receiving the same drugs. To four of these samples reserpine (Serpasil) was added; to another four, phenobarbital alone was added; and to the remaining four, both were added. The second group showed clotting but the first and third did not. In another patient who was being treated with reserpine the prothrombin and clotting times were found to be prolonged but the bleeding time and platelet count were normal.

Hemangioma of the Orbit.—Gantayat and Bhaskarrao in the *J. Indian M. A.* (24:596 [May 1] 1955) reported the case of a 25-year-old woman who was admitted for a painless prominence of the left eye of four years duration. The swelling was gradually increasing. A proptosis of her left eyeball of 1.5 cm. was observed. Movements of this eyeball were limited in all directions. Her preauricular lymph nodes were enlarged on both sides. The vision in her right eye was 6/10 and in her left eye was almost absent. Her optic disk appeared pale and the margins were blurred; the arteries and veins were tortuous. A biopsy was performed and the sections revealed fibroangiomatous tissue. There was no evidence of malignancy. Evisceration of the left orbit was performed. Examination of the mass removed showed a soft conical tumor arising from the retro-orbital tissues. On section a number of cavernous spaces filled with blood were observed. On microscopic examination, large cavernous blood spaces lined by endothelium and bound together by trabecular connective tissue were seen. There was no evidence of malignancy.

Ascorbic Acid Removal from Adrenal Glands.—Mukherji and Werner in the *Bulletin of Calcutta School of Tropical Medicine* (3:19 [Jan. 1] 1955) reported that ascorbic acid is removed from the adrenal gland by the action of corticotropin or some specific factor called adrenal ascorbic factor and such depletion occurs in response to stress, epinephrine, atropine, physostigmine, and adrenergic blocking drugs. Rauwolscine, which is the alkaloid of Rauwolfia canescens, is a strong adrenergic blocking drug and experiments were performed to find out whether ascorbic acid was removed from the adrenal glands of rats after administration of Rauwolscine. The left adrenal gland was removed for control estimation. Rauwolscine was injected intraperitoneally and the right adrenal gland was removed immediately after killing the rat one hour after injection. Control animals were treated similarly using isotonic saline solution instead of Rauwolscine. It was found that a significant removal of ascorbic acid from the adrenal gland occurred after the administration of Rauwolscine.

ISRAEL

Health in Israel.—In 1954 the number of physicians in Israel was 3,828 compared to 3,717 in 1953. The ratio of physicians to population is now 1:440, which is one of the highest in the world. In Great Britain it is 1:960; in France 1:1,200; in Austria and Switzerland 1:700; and in Norway 1:950. Eighty per cent of Israel's physicians work in towns, about 2,400 in the three main cities alone (Jerusalem, Haifa, and Tel Aviv), so that about 65% of the physicians are serving 45% of the population. More than 30% of the physicians immigrated to Israel after the establishment of the state in 1948, but more than 90% of the total number of Israeli physicians had practiced medicine in their countries of origin before immigration. The 50 members of the faculty of Hadassah Medical School are graduates of about 50 universities from 16 different European countries, the Americas, Asia, and Africa. Every group of immigrant physicians brought along the knowledge and habits of the countries of their origin or the universities where they were trained. The Jewish population, numbering 650,000 in May, 1948, has absorbed 750,000 new immigrants (35% from Asia, 15% from North Africa, and 49% from Europe). This uncontrolled immigration has few precedents in modern history. Of the community of Yemenite Jews numbering 47,000, who were transferred to Israel by air in the course of one year, 16,000 were in need of hospitalization on arrival. A moderate estimate shows that about 20,000 patients with schistosomiasis have been imported into Israel with immigrants from Yemen and Iraq. Sixty per cent of the immigrants from North Africa are afflicted with trachoma. The large number of tuberculous patients among the new arrivals compelled the state to increase the number of tuberculosis hospital beds from 590 in 1949 to 1,986 by the end of 1952. The transfer of whole communities from Asia and North Africa caused the infant mortality rate to rise from 29:1,000 in 1947 to 51:1,000 in 1949, but, as a result of intensified activities in this field, the rate dropped to 34.5:1,000 in 1954. The ratio between the occurrence of infant toxicosis among new immigrants and established residents was 17:1. The mental and social adjustment of these heterogeneous groups (a gap of eight centuries separates the immigrant from Western Europe from his contemporary from the Yemen) constitutes an enormous medicosocial task. Fifty per cent of the physicians are over 50 years old; 600 have already reached the age of 65 or more and must be replaced in the next few years. Taking into account that the average number of graduates of the medical school is about 60 each year, it will take 10 years just to provide the replacements needed. Moreover, there is a shortage of specialists, especially in radiology, anesthesiology, orthopedics, general surgery, ophthalmology, and psychiatry. The lack of well-trained specialists in public health and preventive medicine will certainly make itself felt in the coming years when the reorganization and expansion of the existing health services are undertaken.

New Outbreak of Schistosomiasis.—While during 1953 and 1954 isolated cases of schistosomiasis could be observed in new immigrants, now for the first time infestation with Schistosoma hæmatobium has been discovered in a group of settlers in the Jordan Valley. G. Wittenberg and Z. Saliternik reported (*Harefuah*, vol. 48, May 15, 1955) that Bulinus, the snail vector of S. hæmotobium, is widespread. In addition to the natural foci, it has appeared in ponds and drainage canals constructed within the past two years. In view of radical changes in distribution of artificial water courses occurring lately, its appearance and disappearance is unpredictable. On the other hand, the distribution of Planorbis, the snail vector of Schistosoma mansoni, is limited to a small section of the Yarkon River. This unequal distribution of snail species is inverse to the frequency of human carriers of corresponding Schistosoma parasites; the numerous carriers of S. mansoni (mainly immigrants from Yemen) are in contrast to the rare carriers of S. hæmatobium. This is the main reason why new cases of schistosomiasis are rare. However, in view of the ubiquity of snail carriers of either species, outbreaks of schistosomiasis are to be expected and precautions are advised. Recent discovery of urinary schistosomiasis at Tirat-Zvi, a village in the Jordan Valley, indicates that an epidemic development of that disease may occur, if every possible precaution is not taken to stop its course immediately. At present nearly 50% of the youth of this village are infected.

MEXICO

Pleuropneumonia and Urethritis.—The fact that the micro-organisms of the pleuropneumonia group produce diverse pathological pictures in animals has been known for some time. Because they have been found in the human genitourinary tract, it has been suggested that they may have some relation to Reiter's disease. Olarte has recently (*Revista de investigación clinica*, vol. 7, April-June, 1955) isolated seven species of the pleuropneumonia group from seven men with chronic urethritis in whom the presence of Neisseria gonorrhoeae was eliminated by the use of ordinary bacteriological methods. Urine and urethral secretions were taken from 12 patients. The urinary sediment and urethral secretion were mixed with a drop of diazine solution (2 mg. per milliliter). This preparation was cultured on a solid infusion medium of fresh heart muscle with peptone at a pH of 7.8. To this was added 30% sterile horse serum. In order to avoid desiccation, the Petri dishes were sealed with clay. They were incubated at 30 C and were observed at 48-hour intervals with a stereoscopic microscope. Minute colonies or small masses were observed. The incubation was continued for 20 days before discarding the negative cultures.

From seven of the patients, organisms with the characteristics of the pleuropneumonia group were isolated. It was possible to make serial cultures from the positive cultures. It was also possible to promote their growth in a liquid medium without the appearance of bacterial forms. This last requisite is important because it has been found that the L forms of bacterial origin, which are similar to the micro-organisms of the pleuropneumonia group, can be differentiated because they fail to grow in liquid mediums and, if they do, they convert to the bacterial form from which they spring.

One of the species was inoculated into the chorioallantoid membrane of the chick embryo, and it was possible to recover this same species from the embryo. In preparations stained with Giemsa's stain, numerous inclusion bodies were observed. The author states that he is not trying to establish a relationship between the findings of a positive pleuropneumonia group organism with the urethritis that the seven patients had but that he is simply demonstrating the existence of these micro-organisms in Mexico. The pathogenicity of these micro-organisms in man is still to be established.

Control of Yellow Fever.—Although no cases of jungle yellow fever have been observed in Mexico, if the necessary precautions are not taken it is believed that within a year and a half there will be cases of this disease in the states and territories bordering Guatemala, because a northward spread of the disease has been in progress ever since the epidemic outbreak in Panama in 1948. For this reason the federal government has taken the following measures: (1) vaccination of all inhabitants of Campeche and Yucatán first and then those of Chiapas, Tabasco, and Quintana Roo; (2) intensification of the campaign against the mosquito; and (3) instruction to the public on the preventive measures that can be taken individually.

CORRESPONDENCE

SURGICAL ANESTHESIA AGAIN

To the Editor:—In the April, 1954, issue of *Surgery*, I had an editorial on surgical anesthesia. In the Dec. 25, 1954, issue of THE JOURNAL, page 1628, a letter of mine entitled "Surgeon and Anesthetist—Good and Bad Teamwork" was published. In both of these contributions I pointed out that suture lines are occasionally broken by patients struggling under anesthesia. This is not a theoretical consideration, as I have seen it occur before the wound was closed. How often suture lines break after the wound is closed, when the patient struggles under anesthesia, no one knows. My entire purpose was to point out an occurrence that, while probably not frequent, is a lamentable incident for the patient when it does occur, and to indicate that such incidents could be cut to the minimum, or probably entirely eliminated, by a closer cooperation between the anesthetist and the surgeon. Certainly the welfare of the patient is in jeopardy if there is not close cooperation between these two specialists who must work so closely in unison. The best anesthesiologists with whom I am acquainted and with whom I have corresponded agree with the thesis I put forward. Indeed, the professor of anesthesiology in one of the leading medical schools on this continent wrote: "I agree with you entirely that the conditions about which you complain are bad for the patient and inexcusable on the part of the anesthesiologist. I believe that this is an example of how badly we fulfill our duties as physicians when we become addicted to routine practice rather than individual appraisal of a therapeutic procedure. . . . I intend to bring your very stimulating letter to the attention of my students."

Although my object was to stimulate closer cooperation between the surgeon and the anesthesiologist, several anesthesiologists seem to resent my suggesting that there could possibly be an improvement in their specialty. It goes without saying that there can be improvement in all of our specialties. Every physician should be glad to have any suggestion that furthers the welfare of the patient. One anesthesiologist, Dr. Willis G. Watrous (*Surgery* 36:831, 1954) made the statement that my editorial in *Surgery* "cannot go unchallenged by the anesthesiologists." This chip-on-the-shoulder attitude does not enhance the working cooperation between the surgeon and the anesthetist, which I was seeking to bring about. The statements I made were factual statements and included episodes encountered in my own experience. They are fortunately not the rule, but the exception. What we are playing for, however, is the 100th case. We cannot attain that goal by antagonistic attitudes, but only by the closest and the most wholehearted cooperation. Dr. Watrous further says that considering the functions of the anesthetist, "it is inconceivable that many patients will be carried lightly to the point of straining with handicap to the work of the surgeon." This is certainly a naïve point of view, as every experienced surgeon knows. It is true that such incidents are decreasing with the improvement in surgical anesthesia, but it is only by recognizing present shortcomings that we can continue our improvement.

Dr. Watrous (*J. A. M. A.* **157**:843 [March 5] 1955) and others (Helmsworth, F. W.: *J. A. M. A.* **157**:945 [March 12] 1955. Greene, B. A., and Berkowitz, S.: ibid. **157**:1433 [April 16] 1955) discuss other causes of postoperative hernias than wound disruption. Every surgeon is well aware of the various causes of these unhappy conditions. I was discussing only one cause, which the anesthetist can aid the surgeon in eliminating.

I wish to reiterate that the procedure of sucking out the trachea is greatly overdone, and this should not be done at all if it is going to cause the patient to struggle. Some anesthetists claim that their reason for doing this is to get the patient to cough. That is much better done after the patient is conscious. There are certain calculated risks that go with surgery. It is much better to run the risk of a little atelectasis than to destroy the work the surgeon has done by causing the patient to struggle violently before he is conscious. After he is conscious, pain will keep him from any movement that will do damage to his wound. It is true that morphine postoperatively depresses the respiration somewhat, but that is another calculated risk that the surgeon has to take. It is much better to give the patient a narcotic and let him sleep his anesthesia off than to let him struggle it off. I agree with Beecher (*J. A. M. A.* **157**:242 [Jan. 15] 1955) that only hypnotics and not narcotics should be given preoperatively. Then if the patient needs a narcotic postoperatively, it will not depress his respiration so much. One ample dose of a narcotic given soon after operation to prevent struggling is often all the patient needs. Once he is awake, all the various methods of improving his respiratory function may be used.

Again let me repeat that nothing I said in either of my previous contributions was meant as an adverse or blanket criticism of anesthesiologists. On the contrary, my experience with anesthesiologists has been such as to lead me, in general, to give them the highest praise. I was only pointing out some unfavorable things that are occasionally encountered and that all of us, both surgeons and anesthesiologists, should strive to correct.

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WASHINGTON'S BASIC SCIENCE LAW

To the Editor:—Our attention has been directed to a paragraph relating to Washington state's new basic science law appearing in the May 28, 1955, issue of THE JOURNAL. This paragraph, which was printed in table 35, on page 303, begins as follows:

> Washington
>
> By recent amendment, effective June 8, 1955, examination may be waived if the applicant has passed an examination before examiners in the basic sciences in those states that have a basic science act, *or before examiners authorized to issue licenses to practice the healing art in another state*. (Italics are ours.)

The following statement is taken from the new law: "(43.74.035 RCW, 1a) The applicant has passed an examination in the basic sciences before examiners in basic sciences in those states which have a basic science act." This is a basic condition for reciprocal license in the basic sciences, and nowhere in the law is there any statement that would permit the Washington basic science board to accept a medical, osteopathic, chiropractic, drugless, or chiropody certificate as a substitute for the basic science certificate implied in the quotation given above. Ever since the law passed the 1955 legislature, this office has been deluged with requests for applications to obtain basic science registration by reciprocity. Besides answering these letters we have informed the professional societies in the state of the actual situation in regard to the new law, but the facts of the case have evidently not spread as fast as the false rumors. Therefore, we believe it may be of value to present the registrants of other states, who make up the bulk of our inquirers, with a fuller and more accurate account of the new law.

The law took effect at midnight June 8. The board thereupon commenced a thorough study of the laws, regulations, and examinations of the other basic science boards in the country. You will note that the law makes several specifications, in the waiver section, as to the states whose registrants may be accepted by the Washington board. These specifications will require individual consideration and exercise of judgment on the part of the board. As the members of the board are faculty members with full-time teaching schedules, they will be unable to devote all their energies to this task. It is estimated that no final decisions may be made before the January, 1956, examination period.

EDWARD C. DOHM
Professional Division
Department of Licenses
Olympia, Wash.

GOVERNMENT SERVICES

ARMY

Civilian Medical Care for Army Personnel.—Medical care and treatment is provided for Army personnel in the United States generally by dispensaries, infirmaries, and hospitals located at military installations throughout the country. There are many locations, however, where Army or other U. S. federal medical treatment facilities are not available. In such cases the services of civilian physicians, clinics, and hospitals are necessary. Certain criteria and procedures define the conditions under which individuals of the Army may be authorized civilian medical care at the expense of the Army. Civilian medical care, other than elective, is authorized for commissioned officers, warrant officers, enlisted personnel, cadets of the U. S. Military Academy, and prisoners, when these personnel are on a duty status or when they are absent from their place of duty on other authorized nonduty status. Payment for civilian medical expenses incurred by Army personnel who are absent without leave is not authorized.

Army personnel are authorized civilian medical care only when there are no military or other federal medical treatment facilities available; first aid or emergency treatment is authorized at any time. In this connection, emergency medical care may be defined as that which is required to save life or limb, or that which prevents great suffering. Surgical operations should not be performed without prior approval of the surgeon of the nearest military installation or the appropriate military authority listed below, unless indicated as an emergency procedure. Elective medical treatment by civilian physicians will not be authorized. Medical care of dependents of military personnel from civilian sources at Army expense is not authorized. Dependents of military personnel may obtain available medical care at Department of Defense medical facilities only. Any obligations resulting from civilian medical care to dependents of military personnel are the responsibility of the dependents concerned or their sponsors.

As a general rule military authorities will furnish the civilian medical agency with prior written approval for ordinary medical care to Army personnel under their jurisdiction. In such cases prior arrangements with the civilian medical agency will be made by the individual or by a proper military authority. For emergency cases treated without prior written authorization, the commanding officer of the patient's organization and the surgeon of the Army area in which the treatment is rendered, as listed below, should be immediately notified by the civilian medical agency, giving the individual's name, organization, military address, nature of illness or injury, and statement of the practicability of transfer of the patient to an Army or other governmental hospital. The civilian agency or physician then will be advised without delay by the appropriate military authorities as to procedures to be followed. Bills for medical care and treatment of Army personnel who have presented authorization or have received emergency treatment should be submitted to the commanding officer of the organization to which the patient belongs or to the military authority who provided the authorization for the medical service. If these addresses cannot be determined, the bill should be sent to the military authorities listed below.

For Services Rendered in the Following States	Submit Bills to
First Army Area	
Connecticut	The Surgeon, First Army; Governors Island, New York, N. Y.
Maine	
Massachusetts	
New Hampshire	
New Jersey	
New York	
Rhode Island	
Vermont	
Second Army Area	
Delaware	The Surgeon, Second Army; Fort George G. Meade, Maryland
Kentucky	
Maryland	
Ohio	
Pennsylvania	
Virginia	
West Virginia	
Third Army Area	
Alabama	The Surgeon, Third Army; Fort McPherson, Georgia
Florida	
Georgia	
[illegible]	
[illegible]	
[illegible]	
Tennessee	
Fourth Army Area	
Arkansas	The Surgeon, Fourth Army; Fort Sam Houston, Texas
[illegible]	
[illegible]	
[illegible]	
Texas	
Fifth Army Area	
Colorado	The Surgeon, Fifth Army; 1660 E. Hyde Park Blvd., Chicago 15, Ill.
Illinois	
Indiana	
Iowa	
Kansas	
Michigan	
[illegible]	
[illegible]	
[illegible]	
[illegible]	
South Dakota	
Wisconsin	
Wyoming	
Sixth Army Area	
Arizona	The Surgeon, Sixth Army; Presidio of San Francisco, California
California	
Idaho	
Montana	
Nevada	
Oregon	
Utah	
Washington	
Military District of Washington	
Washington, D. C.	The Surgeon, Military District of Washington; Washington 25, D. C.

The bill should show the full name, rank, and service number of the patient and his organization. The place and inclusive dates of treatment, diagnosis, and itemized charges must be entered on the statement. The lack of this information seriously impairs prompt payment by the Army. The duty status of the patient at the time of illness or injury, such as duty, leave, or pass, should be included, if known. Payment will be further expedited if the following certificate is typed on the bill and signed:

> I certify that the above charges are correct and just; that payment therefor has not been received; that the services were necessary in the care and treatment of the person named above; that the services were rendered as stated; and that the charges do not exceed those customarily charged in this vicinity.

____________________ ____________________

(Signature of Payee) (Business Title or Capacity)

Answers to specific questions or further information concerning this matter may be requested of the military surgeons at the above addresses or from The Surgeon General, Department of the Army, Washington 25, D. C. Any difficulties that are experienced should be called to the attention of these Army authorities in order that this program may function smoothly toward the best interests of the patient as well as the claimant.

Personal.—Lieut. Col. Edward J. Dehné, former chief of preventive medicine, U. S. Army, Caribbean, has been named by the surgeon general head of the Army environmental health laboratory at the Army Chemical Center, succeeding Col. Joseph H. McNinch, who is now serving in the office of the surgeon general, Washington, D. C.——Col. Robert L. Callison has been appointed chief of the preventive medicine division in the surgeon general's office. He was certified as a diplomat by the American Board of Preventive Medicine and Public Health, and for the past two years he has headed the environmental control and sanitation branch of the preventive medicine division.

Postgraduate and Graduate Courses for Physicians

Compiled by the Council on Medical Education and Hospitals for the Period Sept. 1, 1955, to Aug. 31, 1956

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Note: *Postgraduate* courses are designed to keep the physician abreast of his field of practice or enlarge his knowledge in one aspect of it. *Graduate* courses are designed to prepare a physician entirely or in part for a specialty or an advanced academic degree.

A. POSTGRADUATE COURSES

Type	Designed for	Time Arrangements
R—Refresher	G—General Practitioners	C—Concentrated, full-time
S—Special	S—Specialists	I —*Intermittent*
	B—All Physicians	

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	*Time Arrangements*	Fee in Dollars
			2. ALLERGY						
2 P 01716	Allergy and Related Conditions [5, 87]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	50	Laboratory work Clinical case work	9/21/55	I; 5 hr. weekly for 10 wk. Wednesdays	125
2 P 01717	Allergy and Related Conditions [5, 87]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	50	Laboratory work Clinical case work	3/21/56	I; 5 hr. weekly for 10 wk. Wednesdays	125
2 P 01606	Asthma, Hay Fever and Allied Diseases [5, 23]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	140	Laboratory work Clinical case work	Arranged	C; 4 wk.	200
2 P 01609	Personal Course in Allergy [5, 23]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	500	Laboratory work Clinical case work	Arranged	C; 6 mo.	500
2 P 01608	Personal Course in Allergy [5, 23]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	140	Laboratory work Clinical case work	Arranged	C; 4 wk.	200
2 P 01607	Asthma, Hay Fever and Allied Diseases [5, 23]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	*500*	Laboratory work Clinical case work	*Arranged*	C; *6 mo.*	500
2 P 01834	Allergic and Hormonal Management of Hay Fever and Asthma [11]	State University of Iowa College of Medicine Iowa City	R	B	6	Lecture or panel Demonstration	5/16/56	C; 1 day	10

2 P 04319	American Academy of Allergy Postgraduate Course [1, 2]	Chase Hotel St. Louis	S	B	15	Lecture or panel	2/ 3/56	C; 3 days	Nil
2 P 02360	Allergy in Relation to Otolaryngology [3, 4, 5]	Park Plaza Hotel 220 N. Kingshighway, St Louis	S	S	35	Laboratory work Small group discussion Lecture or panel	5/30/56	C; 5 days	150
2 P 03306	5415-A Allergy [6]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	105	Laboratory work Clinical case work	10/31/55	C; 3 wk.	200
2 P 03546	Allergy [7, 8]	Beth-El Hospital Brooklyn, N. Y.	R	G	20	Lecture or panel Demonstration	10/55	I; 2 hr. weekly for 10 wk. Tuesdays	30
2 P 03307	5416-A Refresher Course in Allergic Conditions [9]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	21	Lecture or panel Demonstration	3/12/56	C; 3 days	50
2 P 03293	513-A Allergy [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	16	Lecture or panel Demonstration	4/13/56	I; 2 hr. weekly for 8 wk. Fridays	40
2 P 02279	Graduate Instructional Course in Allergy [10]	Hotel New Yorker New York	R	B	40	Laboratory work Clinical case work	4/15/56	C; 3 wk.	50
2 P 02962	Allergy DM1096	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	20	Clinical case work Small group discussion	Anytime	I; 2½ hr. weekly for 8 wk. Tuesdays	50
2 P 03160	Allergy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	16	Laboratory work Clinical case work	Arranged	Specially arranged	50
2 P 03842	Allergy [31, 5]	Albert Einstein Medical Center, Northern Division York and Tabor Roads, Philadelphia 41	R	G	60	Clinical case work Lecture or panel	Fall, 1955	I; 3 hr. weekly for 20 wk. Thursdays	75
2 P 03872	Allergy [5, 11, 12]	Montefiore Hospital Fifth Ave. at Darragh, Pittsburgh	S	B	40	Laboratory work Clinical case work	5/ 7/56	C; 5 days	50
2 P 04291	*Allergy*	*University of Washington School of Medicine* Health Sciences Building, Seattle	R	B	Unknown	Clinical case work Small group discussion	Spring, 1956	C; to be arranged	Arranged

3. ANESTHESIOLOGY

3 P 01078	Anesthesiology [13, 14]	White Memorial Hospital 1720 Brooklyn Ave., Los Angeles 33	R	G	Unknown	Clinical case work Lecture or panel	Every 4 mo.	C; 16 wk.	300
3 P 01287	General Anesthesia [15, 16]	St. Francis Hospital 114 Woodland St., Hartford 5, Conn.	R	B	480	Clinical case work	9/15/55	C; 12 wk.	Nil
3 P 01288	Regional Anesthesia [15, 16]	St. Francis Hospital 114 Woodland St., Hartford 5, Conn.	R	B	480	Clinical case work	9/15/55	C; 12 wk.	Nil
3 P 01580	Course 1—Spinal, Regional, and Intravenous Anesthesia [13, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	70	Clinical case work Operative surgery	Arranged	C; 2 wk.	150
3 P 01581	Course 3—Inhalation Anesthesia [5, 106]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	140	Clinical case work Operative surgery	Arranged	C; 4 wk.	200
3 P 01582	Course 4—Endotracheal Anesthesia [5, 13]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	S	70	Clinical case work Operative surgery	Arranged	C; 2 wk.	150
3 P 01830	Postgraduate Course in Anesthesia [306]	State University of Iowa College of Medicine Iowa City	R	B	14	Small group discussion Lecture or panel	1/23/56	C; 2 days	20
3 P 01876	Anesthesiology [17]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	S	B	21	Clinical case work Lecture or panel	4/16/56	C; 3 days	35
3 P 03268	512-A Regional Anesthesiology [18]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	70	Clinical case work Lecture or panel	9/ 6/55	C; 2 wk.	200
3 P 03270	511-A Anesthesiology [19]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	140	Laboratory work Clinical case work	9/19/55	C; 4 wk.	200
3 P 03151	Applied Anesthesiology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	640	Laboratory work Small group discussion	10/ 3/55	C; 12 wk.	300

References will be found on pages 1129-1131.

3. ANESTHESIOLOGY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
3 P 03272	515-A Electrocardiography for Anesthesiologists [20]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Clinical case work Small group discussion	10/17/55	C; 5 days	75
3 P 03265	510-A Anesthesiology: Endotracheal and Related Methods [21]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Clinical case work Lecture or panel	1/23/56	C; 5 days	75
3 P 03271	514-B Anesthesiology [19]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	140	Laboratory work Lecture or panel	2/27/56	C; 4 wk.	200
3 P 03152	Applied Anesthesiology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	640	Laboratory work Clinical case work	4/ 2/56	C. 12 wk.	300
3 P 03519	Anesthesia [5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	S	G	39	Clinical case work Operative surgery	4/23/56	C; 1 wk.	75
3 P 03269	512-B Regional Anesthesiology [18]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	70	Clinical case work	5/ 7/56	C; 2 wk.	200
3 P 03266	510-B Anesthesiology: Endotracheal and Related Methods [21]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Clinical case work Lecture or panel	5/21/56	C; 5 days	75
3 P 02951	Clinical Anesthesiology DAN1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	Unknown	Operative surgery Small group discussion	Anytime	C; 12 wk.	200
3 P 03257	Postgraduate Courses in Anesthesia for Part Time Anesthetists [22]	Various hospitals throughout New York state	S	G	Varies	Clinical case work Small group discussion	Anytime	Specially arranged	Nil
3 P 02921	Resuscitation 68B9	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	8	Small group discussion Lecture or panel	Inquire	C; 1 day	50
3 P 03267	511-A Anesthesiology (for Specialists) [23]	New York University Post-Graduate Medical School 550 First Ave., New York	R	S	70	Clinical case work Small group discussion	Unknown	C; 2 wk.	150
3 P 03154	Regional and Spinal Anesthesiology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	S	80	Laboratory work Small group discussion	Arranged	Specially arranged	150
3 P 03153	Anesthetic Technics	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	40	Laboratory work Small group discussion	Arranged	Specially arranged	100
3 P 03567	Anesthesiology [5]	Duke University School of Medicine Durham, N. C.	S	B	30	Lecture or panel Demonstration	10/20/55	C; 3 days	Unknown
3 P 03923	Recent Advances in the Pharmacology of Anesthetic Agents [192]	Graduate School of Medicine, University of Pennsylvania Philadelphia	R	S	24	Small group discussion Lecture or panel	3/19/56	C; 3 days	60
3 P 03959	Basic Sciences Related to Anesthesiology [52]	University of Pittsburgh School of Medicine 3941 O'Hara St. (Oakland), Pittsburgh 13	S	G	31	Laboratory work Lecture or panel	6/13/56	C; 1 wk.	25
3 P 04178	Anesthesiology [13, 200]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	176	Lecture or panel Demonstration	9/ 5/55	Specially arranged	25
3 P 04162	Anesthesiology	The University of Texas Postgraduate School of Medicine, Texas Medical Center In Houston, Texas	R	G	24	Unknown	9/29/55	C; 3 days	25
3 P 04192	Anesthesiology [16, 206]	The University of Texas Postgraduate School of Medicine, El Paso Division In El Paso, Texas	R	B	8	Lecture or panel	8/56	C; 1 day	10
3 P 04421	Refresher Course for General Practitioners [6]	Vancouver General Hospital Vancouver, British Columbia, Canada	R	G	..	Lecture or panel Theatre clinics	2/20/56	C; 3 days	15

4. ANATOMY

4 P 01118	Head and Neck Surgery [5, 24]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	30	Laboratory work Small group discussion	9/ 7/55	I; 3 hr. weekly for 10 wk. Wednesdays	125
4 P 01114	General Surgery [5, 25]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	36	Laboratory work Small group discussion	9/12/55	I; 3 hr. weekly for 12 wk. Mondays	125
4 P 01080	Surgical Anatomy [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	256	Laboratory work Lecture or panel	10/ 3/55	I; 4 hr. twice weekly for 12½ wk. Mondays, Wednesdays	125
4 P 01081	Surgical Anatomy—Upper and Lower Extremities [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	100	Laboratory work Lecture or panel	10/ 3/55	I; 4 hr. twice weekly for 12½ wk. Mondays, Wednesdays	125
4 P 01084	Surgical Anatomy—Demonstrations and Lectures—Upper and Lower Extremities [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	24	Lecture or panel Demonstration	10/ 5/55	I; 2 hr. weekly for 12 wk. Wednesdays	50
4 P 01085	Surgical Anatomy—Demonstrations and Lectures [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	72	Lecture or panel Demonstration	10/ 5/55	I; 2¼ hr. weekly for 32 wk. Mondays, Wednesdays	100
4 P 01149	Gross and Applied Anatomy [97]	San Diego County General Hospital North End of Front Street, San Diego 3, Calif.	R	B	32	Lecture or panel Demonstration	10/55	I; 2 hr. weekly for 16 wk. Wednesdays	Nil
4 P 01131	Practical and Applied Anatomy [30]	Mercy Hospital Hillcrest Drive, San Diego, Calif	S	B	32	Laboratory work Lecture or panel	10/55	I; 2 hr. weekly for 16 wk. Wednesdays	Nil
4 P 01082	Surgical Anatomy—Thorax, Abdomen, and Pelvis [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	104	Laboratory work Lecture or panel	1/18/56	I; 4 hr. twice weekly for 13 wk. Mondays, Wednesdays	125
4 P 01086	Surgical Anatomy—Demonstrations and Lectures—Thorax, Abdomen, and Pelvis [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	26	Lecture or panel Demonstration	1/18/56	I; 2 hr. weekly for 13 wk. Wednesdays	50
4 P 01115	General Surgery [5, 25]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	36	Laboratory work Small group discussion	3/26/56	I; 3 hr. weekly for 12 wk. Mondays	125
4 P 01119	Head and Neck Surgery [5, 24]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	30	Laboratory work Small group discussion	4/ 4/56	I; 3 hr. weekly for 10 wk. Wednesdays	125
4 P 01077	Surgical Anatomy—Demonstrations and Lectures—Head and Neck [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	22	Lecture or panel Demonstration	4/26/56	I; 2¾ hr. weekly for 7 wk. Mondays, Wednesdays	35
4 P 01083	Surgical Anatomy—Head and Neck [26, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	52	Laboratory work Lecture or panel	4/26/56	I; 4 hr. twice weekly for 6½ wk. Mondays, Wednesdays	75
4 P 01293	Anatomy 202—Demonstrations in Anatomy	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	30	Laboratory work	9/55	I; 1 evening weekly for about 30 wk.	175
4 P 01292	Anatomy 201—Special Dissections in Anatomy	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	Arranged	Laboratory work	Arranged	Specially arranged	Arranged
4 P 01686	Surgical Anatomy on the Cadaver [5, 204]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Small group discussion Demonstration	9/22/55	I; 2 hr. weekly for 10 wk. Thursdays	125
4 P 01687	Surgical Anatomy on the Cadaver [5, 204]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Small group discussion Demonstration	3/22/56	I; 2 hr. weekly for 10 wk. Thursdays	125
4 P 02163	Anatomy [27]	Dept. of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich.	S	S	64	Laboratory work Lecture or panel	2/ 9/56	I; 4 hr. weekly for 16 wk. Thursdays	65
4 P 02238	Regional Anatomy—Head and Neck [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	3/56	I; 4 hr. weekly for 11 wk.	50
4 P 02239	Regional Anatomy—Thorax, Abdomen, and Pelvis [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	3/56	I; 4 hr. weekly for 11 wk.	50
4 P 02240	Regional Anatomy—Back and Extremities [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	3/56	I; 4 hr. weekly for 11 wk.	50
4 P 03259	111-A Anatomy of the Head and Neck [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	111	Laboratory work Small group discussion	9/26/55	I; 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	90

References will be found on pages 1129-1131.

Postgraduate Continuation Cour hysicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		4. ANATOMY—Continued							
4 P 03260	412-A Anatomy of the Thorax and Its Viscera [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	144	Laboratory work Small group discussion	9/26/55	I; 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	90
4 P 03261	413-A Anatomy of the Abdomen [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	144	Laboratory work Small group discussion	9/26/55	I; 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	90
4 P 03264	416-A Anatomy of the Musculoskeletal System [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	144	Laboratory work Small group discussion	3/26/56	I; 4 hr. 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	90
4 P 03263	415-A Anatomy of the Genito-urinary System [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	144	Laboratory work Small group discussion	3/26/56	I; 4 hr. 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	90
4 P 03262	414-A Anatomy of the Female Pelvis [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	144	Laboratory work Small group discussion	3/26/56	I; 4 hr. 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	90
4 P 02942	Applied Anatomy for the General Surgeon DA1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	250	Laboratory work Lecture or panel	Anytime	Specially arranged	375
4 P 02943	Anatomy of the Thorax DA1026	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	100	Laboratory work Small group discussion	Anytime	Specially arranged	150
4 P 02944	Anatomy of the Abdomen DA1036	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	100	Laboratory work Demonstration	Anytime	Specially arranged	150
4 P 02945	Applied Anatomy for the Otolaryngologist DA1046	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	150	Laboratory work Lecture or panel	Anytime	Specially arranged	275
4 P 02946	Applied Anatomy of the Urogenital System DA1056	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	130	Laboratory work Small group discussion	Anytime	Specially arranged	300
4 P 02947	Applied Anatomy for the Anesthetist DA1066	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	125	Laboratory work Demonstration	Anytime	Specially arranged	275
4 P 02948	Anatomy for the Orthopedic Surgeon DA1076	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	S	100	Laboratory work Demonstration	Anytime	Specially arranged	150
4 P 03100	Surgical Anatomy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	12	Laboratory work Clinical case work	Arranged	Specially arranged for 2 wk.	Unknown
4 P 03101	Surgical Anatomy (B)	New York Polyclinic Medical School and Hospital 345 W 50th St., New York 19	S	B	12	Laboratory work Small group discussion	Arranged	Specially arranged for 2 wk.	200
4 P 03104	Surgical Anatomy (D)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	6	Laboratory work Cadaver demonstration	Arranged	Specially arranged	150
4 P 03107	Anatomy, Dissections, Demonstrations, and Lectures	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	12	Laboratory work Clinical case work	Arranged	Specially arranged	200
4 P 03960	Surgical Anatomy [57, 10]	University of Pittsburgh School of Medicine 3941 O'Hara St. *(Oakland)*, Pittsburgh 13	R	B	180	Laboratory work Lecture or panel	10/55	Specially arranged	25
4 P 04161	Surgical Anatomy	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	B	16	Laboratory work	9/55	I; 2 hr. monthly for 8 mo. Thursdays	50
4 P 04299	Surgical Anatomy of the Head and Neck	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	30	Lecture or panel Demonstration	Spring, 1956	I; 3 hr. weekly for 10 wk.	Unknown
4 P 04443	Surgical Anatomy	Anatomy Department, Faculty of Medicine, University of Ottawa Ottawa, Canada	R	B	20	Unknown	Variable	Specially arranged	10
4 P 04458	Evening Anatomy Course [156, 16]	Faculty of Medicine, University of Toronto Toronto 5, Canada	S	S	48	Demonstration	9/26/55	I; 1½ hr. weekly for 32 wk. Mondays	60

5. BASIC SCIENCES

5 P 01220	811: Cardio-Respiratory Physiology [182, 37]	Hospital of the Good Samaritan, U. S. C. Cardio-Respiratory Laboratory 1212 Shatto St., Los Angeles 17	S	S	36	Lecture or panel Demonstration	Unknown	I; 3 hr. weekly for 12 wk.	50
5 P 01968	Basic Sciences as They Apply to the Practice of Medicine [29, 30, 5]	University of Maryland School of Medicine 29 South Greene St., Baltimore	S	B	66	Lecture or panel	9/22/55	I; 2 hr. weekly for 33 wk. Wednesdays	50
5 P 01006	Postgraduate Basic Science Course [5]	University of South Dakota School of Medical Sciences Medicine and Science Building, Vermillion, S. D.	R	B	180	Laboratory work Small group discussion	9/ 1/55	Specially arranged	75
5 P 01007	Postgraduate Basic Science Course [5]	University of South Dakota School of Medical Sciences Medicine and Science Building, Vermillion, S. D.	R	B	180	Laboratory work Small group discussion	2/ 1/56	Specially arranged	75

6. BIOCHEMISTRY

6 P 01605	Biochemical Background of Clinical Medicine—a Basic Course [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Small group discussion Lecture or panel	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
6 P 01606	Biochemical Background of Clinical Medicine—a Basic Course [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Small group discussion Lecture or panel	3/21/56	I; 2 hr. weekly for 10 wk. Wednesdays	100
6 P 02138	Biochemistry [5, 31, 10]	Seton Hall University South Orange, N. J.	S	B	24	Lecture or panel Demonstration	11/55	I; 2 hr. weekly for 12 wk. Wednesdays	75
6 P 02992	Survey of Biochemistry DBC1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Small group discussion Lecture or panel	10/55	Specially arranged	50
6 P 02994	Enzymes DBC1036 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	G	Unknown	Small group discussion Lecture or panel	10/55	Specially arranged	100
6 P 02998	Food and Nutrition DBC1076 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Small group discussion Lecture or panel	10/55	Specially arranged	80
6 P 02995	Vitamins DBC1046 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Small group discussion Lecture or panel	11/55	Specially arranged	100
6 P 02996	Hormones DBC1056 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	G	Unknown	Small group discussion Lecture or panel	12/55	Specially arranged	100
6 P 02997	Metabolic Disorders DBC1066 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Small group discussion Lecture or panel	1/56	Specially arranged	100
6 P 02999	Acid Base Balance DBC1086 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	G	Unknown	Small group discussion Lecture or panel	1/56	Specially arranged	50
6 P 02993	Intensive Review of Biochemistry DBC1026 [33]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Lecture or panel	Anytime	Specially arranged	50
6 P 03860	Radioisotope Methodology (Bio. Chem. 125 & 126) [5, 10, 34]	Hahnemann Medical College and Hospital 235 N. 15th St., Philadelphia 2	S	B	112	Laboratory work Clinical case work	9/19/55	I; 7 hr. weekly for 16 wk. Tuesdays, Wednesdays	75
6 P 01185	Radioisotope Methodology (Bio. Chem. 125 & 126) [5, 10, 34]	Hahnemann Medical College and Hospital 235 N. 15th St., Philadelphia 2	S	B	112	Laboratory work Clinical case work.	2/ 6/56	I; 7 hr. weekly for 16 wk. Tuesdays, Wednesdays	75

7. CARDIOVASCULAR DISEASE

7 P 02930	Symposium on Heart Disease [203, 5]	Monterey County Heart Association Box 1329, 691 Cotton, Monterey, Calif	R	B	Unknown	Small group discussion Lecture or panel	Fall, 1955	C; 2 days	10
7 P 01161	26th Annual Symposium on Heart Disease [35, 36]	Hotel St. Francis Powell and Geary Streets San Francisco 2	S	B	20	Clinical case work Lecture or panel	10/ 5/55	C; 3 days	25
7 P 01053	25th Annual Symposium on Heart Disease	Los Angeles County Heart Association 316 South Bonnie Brae St., Los Angeles	S	S	12½	Lecture or panel	10/12/55	C; 2 days	15
7 P 01120	Electrocardiography [5]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	21	Small group discussion Lecture or panel	1/ 4/56	I; 2 hr. weekly for 12 wk. Wednesdays	60

References will be found on pages 1129-1131.

Postgraduate Continuation Cours ysicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		7. CARDIOVASCULAR DISEASE—Continued							
7 P 03318	5428-A Cardiac Roentgenology [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	14	Lecture or panel Demonstration	11/ 3/55	C; 2 days	30
7 P 03312	5423-A Electrocardiography [8]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Lecture or panel Demonstration	11/14/55	C; 5 days	75
7 P 03641	Med PM 62—Cardiology 2 [31]	Montefiore Hospital East Gun Hill Road, New York 67	S	B	78	Laboratory work Clinical case work Small group discussion	1/ 5/56	I; 3 hr. weekly for 26 wk. Thursdays	150
7 P 03642	Med PM 60—Cardiology 1 [31]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	78	Laboratory work Clinical case work Small group discussion	1/ 5/56	I; 3 hr. weekly for 26 wk. Thursdays	150
7 P 03321	5431-A Modern Concepts in the Etiology, Diagnosis, and Treatment of Heart Diseases [47]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Lecture or panel Demonstration	1/ 9/56	C; 5 days	50
7 P 01339	Med PM 63A—Clinical Electrocardiography [31]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	26	Small group discussion Demonstration	1/31/56	I; 1 hr. weekly for 26 wk. Tuesdays	100
7 P 03640	Med PM 63—Cardiology 3 [31]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	78	Laboratory work Clinical case work Small group discussion	1/31/56	I; 3 hr. weekly for 26 wk. Tuesdays	150
7 P 02479	Recent Advances in Therapy of Cardiovascular Disease	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	20	Small group discussion Lecture or panel	2/ 3/56	C; 2½ days	25
7 P 03317	5427-B Auscultation of the Heart [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	21	Lecture or panel Demonstration	2/27/56	C; 3 days	50
7 P 03319	5428-B Cardiac Roentgenology [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	14	Lecture or panel Demonstration	3/ 1/56	C; 2 days	30
7 P 03313	5423-B Electrocardiography [8]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Lecture or panel Demonstration	3/19/56	C; 5 days	75
7 P 03294	544-A Cardiology [48]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	24	Lecture or panel Demonstration	4/12/56	I; 3 hr. weekly for 8 wk. Thursdays	75
7 P 03295	544-B Clinical Electrocardiography [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	12	Lecture or panel Demonstration	4/12/56	I; 1½ hr. weekly for 8 wk. Thursdays	40
7 P 03499	Advanced Electrocardiography [5]	State University of New York, Upstate Medical Center 766 Irving Ave., Syracuse, N. Y.	R	B	14	Lecture or panel	4/12/56	I; 2 hr. weekly for 7 wk. Thursdays	15
7 P 02786	Clinical Cardiology [7, 49]	Beth-El Hospital Brooklyn, N. Y.	R	G	18	Clinical case work Lecture or panel	4/56	I; 1½ hr. twice weekly for 6 wk. Wednesdays, Fridays	30
7 P 02787	Interpretation of the Electrocardiogram [7, 8]	Coney Island Hospital Brooklyn, N. Y.	R	G	10	Lecture or panel Demonstration	4/56	I; 1 hr. weekly for 10 wk. Tuesdays	20
7 P 03142	Electrocardiographic Interpretation	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	10	Laboratory work Clinical case work	Arranged	Specially arranged	75
7 P 04495	Clinical Correlation in Electrocardiograms with Disease Processes (Hospitalized Patients)	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	S	B	24	Small group discussion	Arranged	I; 2 hr. weekly for 12 wk. Wednesdays	60
7 P 02956	Cardiology DM1046 [50]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	60	Clinical case work Small group discussion	Anytime	I; 3 hr. weekly for 20 wk. Wednesdays	150
7 P 02957	Electrocardiography DM1056 [8]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	25	Small group discussion Demonstration	Anytime	C; 2 wk.	100
7 P 03314	5425-A Cardiology [8]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	21	Lecture or panel Demonstration	Unknown	C; 3 wk.	250

7 P 03564	Electrocardiographic Review (Advanced in January)[5, 281]	Duke University School of Medicine Durham, N. C.	R	B	18	Laboratory work Lecture or panel	1/56	C; 3 days	100
7 P 03560	Postgraduate Course in Cardiovascular Disease[227, 228]	The Bowman Gray School of Medicine of Wake Forest College Winston-Salem, N. C.	S	B	24	Clinical case work Lecture or panel	6/21/56	C; 3 days	Nil
7 P 03565	Electrocardiographic Review (Primary in June)[5, 281]	Duke University School of Medicine Durham, N. C.	R	B	18	Laboratory work Lecture or panel	6/56	C; 3 days	100
7 P 03844	Cardiology[141, 5]	Albert Einstein Medical Center, Southern Division Fifth and Reed Streets, Philadelphia 47	R	G	60	Clinical case work Lecture or panel	Fall, 1955	I; 3 hr. weekly for 20 wk. Wednesdays	75
7 P 03858	Advanced Cardiology Course[51]	Hahnemann Medical College and Hospital 235 N. 15th St., Philadelphia 2	S	G	45	Small group discussion Demonstration	10/55	I; 1½ hr. weekly for 30 wk. Thursdays	150
7 P 03857	Post Graduate Cardiology Course[5, 52]	Hahnemann Medical College and Hospital 235 N. 15th St., Philadelphia 2	R	G	90	Lecture or panel Demonstration	10/55	I; 3 hr. weekly for 30 wk. Thursdays	150
7 P 03921	Cardiovascular Diagnosis[101]	Graduate School of Medicine, University of Pennsylvania Philadelphia	R	B	6	Small group discussion Lecture or panel	1/11/56	I; 3 hr. weekly for 2 wk. Wednesdays	75
7 P 04105	Clinical Electrocardiography[51, 5]	University of Tennessee College of Medicine 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	10/ 5/55	C; 3 days	50
7 P 04108	Cardiac Arrest[51, 5]	University of Tennessee College of Medicine 874 Union Ave., Memphis, Tenn.	R	G	13	Clinical case work Small group discussion	10/20/55	C; 2 days	30
7 P 04131	Cardiology[210, 221, 241]	The University of Texas Southwestern Medical School 5323 Harry Hines Blvd., Dallas, Texas	R	S	35	Lecture or panel	1/16/56	C; 1 wk	30 to members
7 P 04182	Electrocardiology[115, 208]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	70	Laboratory work Lecture or panel	2/ 6/56	Specially arranged	25
7 P 04168	Practical Cardiology	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	B	24	Laboratory work Lecture or panel	3/56	C; 3 days	Unknown
7 P 04250	Functional and Degenerative Cardiovascular Disease—Origin and Treatment[8]	University of Vermont College of Medicine Burlington, Vt.	S	B	8	Lecture or panel	9/14/55	C; 2 days	10
7 P 04249	A Seminar in Electrocardiography and the Diagnosis of Ventricular and Auricular Hypertrophy	University of Vermont College of Medicine Burlington, Vt.	S	B	14	Small group discussion Lecture or panel	9/16/55	C; 2 days	10
7 P 04297	Recent Advances in Cardiology	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	15	Clinical case work	Winter, 1956	C; 2 days	20

8. DERMATOLOGY

8 P 01097	Dermatology[23]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	18	Small group discussion Demonstration	1/10/56	I; 1½ hr. weekly for 12 wk. Tuesdays	40
8 P 01202	Dermatology for General Practitioners	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	R	G	20	Lecture or panel Demonstration	7/56	C; 3 days	30
8 P 01729	Dermatology[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Laboratory work Clinical case work	9/22/55	I; 2½ hr. weekly for 10 wk. Thursdays	100
8 P 01654	Dermatology[5, 64]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Clinical case work Small group discussion	10/17/55	C; 2 wk.	100
8 P 01728	Dermatology[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Laboratory work Clinical case work	3/22/56	I; 2½ hr. weekly for 10 wk. Thursdays	100
8 P 01655	Dermatology[5, 64]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Clinical case work Small group discussion	5/ 7/56	C; 2 wk.	100
8 P 01656	Clinical Dermatology[5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Clinical case work Small group discussion	Arranged	C; 2 wk.	75

References will be found on pages 1129-1131.

8. DERMATOLOGY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
8 P 01657	Clinical Dermatology [5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	120	Clinical case work Small group discussion	Arranged	C; 4 wk.	125
8 P 01827	Dermatology and Syphilology Postgraduate Course [173]	State University of Iowa College of Medicine Iowa City	R	B	8	Small group discussion Lecture or panel	10/28/55	C; 1 day	10
8 P 02220	Dermatology Seminar	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	22	Small group discussion	Unknown	I; 2 hr. weekly for 11 wk.	15
8 P 02221	Dermatopathology Seminar	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Small group discussion	Unknown	I; 1 hr. weekly for 11 wk.	15
8 P 02327	Dermatology for General Physicians [33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	6/ 4/56	C; 3 days	25
8 P 03273	521-A Comprehensive Review in Dermatological Histopathology [19]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	28	Laboratory work Lecture or panel	9/19/55	C; 4 days	75
8 P 03275	524-A Dermatology and Syphilology (Designed for Pediatricians) [19]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Clinical case work Lecture or panel	10/10/55	C; 5 days	75
8 P 03511	Dermatology [5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	18	Clinical case work Small group discussion	10/26/55	I; 3 hr. weekly for 6 wk. Wednesdays	35
8 P 02781	Diagnosis and Treatment of Common Skin Disorders [7, 8]	Beth-El Hospital Brooklyn, N. Y.	R	G	8	Clinical case work Lecture or panel	10/55	I; 1 hr. weekly for 8 wk. Tuesdays	20
8 P 03274	522-A Seminar in Dermatology and Syphilology (Designed for Nondermatologists) [19]	New York University Post-Graduate Medical School 550 First Ave., New York	R	G	35	Clinical case work Lecture or panel	1/16/56	C; 5 days	75
8 P 02798	Diagnosis and Treatment of Common Skin Disorders [7, 8]	Beth-El Hospital Brooklyn, N. Y.	R	G	8	Clinical case work Lecture or panel	4/56	I; 1 hr. weekly for 8 wk. Tuesdays	20
8 P 03397	523-A Symposium on Dermatology and Syphilology [19]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Clinical case work Lecture or panel	5/14/56	C; 5 days	85
8 P 03398	527-A Demonstrations of Practical Clinical Dermatology and Syphilology	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged	Unknown
8 P 03399	528-A Practical Instruction in Dermatologic Mycology and Animal Parasitology	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged	Unknown
8 P 03400	529-A Practical Instruction in Dermatologic Therapy	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged	Unknown
8 P 03401	5210-A Practical Instruction in Dermatologic Surgery	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Operative surgery Demonstration	Arranged	Specially arranged	Unknown
8 P 03402	5211-A Practical Instruction in Dermatologic Allergy and Immunology	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged	Unknown
8 P 03403	5212-A Practical Instruction in Physical Therapy	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged	Unknown
8 P 03404	5213-A Practical Instruction in Industrial and Occupational Dermatoses	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Lecture or panel Seminars	Arranged	Specially arranged	Unknown
8 P 03405	5214-A Practical Instruction in Dermatologic Histopathology	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Laboratory work	Arranged	Specially arranged	Unknown
8 P 03406	5215-A Practical Instruction in Dermatologic Hematology	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Laboratory work	Arranged	Specially arranged	Unknown
8 P 03407	5216-A Practical Instruction in Dermatologic Photography	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Laboratory work Photography	Arranged	Specially arranged	Unknown

8 P 03108	5217-A Practical Instruction in Diagnosis, Prevention, Treatment, Statistical Follow-Up, and Public Health Aspects of Venereal Diseases	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged	Unknown
8 P 03409	5218-A Experiments and Research in Biochemistry, Biophysics and Other Laboratory Methods as Applied to the Physiology and Pathology of the Skin	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	Unknown	Laboratory work	Arranged	Specially arranged	Unknown
8 P 03815	Dermatology[58, 5]	Albert Einstein Medical Center, Northern Division York and Tabor roads, Philadelphia 11	R	G	30	Clinical case work Lecture or panel	Spring, 1956	I; 2½ hr. weekly for 12 wk. Thursdays	35
8 P 01103	Dermatology[51, 5]	University of Tennessee College of Medicine 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	5/ 9/56	C; 3 days	50
8 P 04175	Dermatology and Syphilology[13, 200]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	88	Laboratory work Clinical case work	Arranged	Specially arranged for 2 wk.	25
8 P 01340	Annual Venereal Disease Postgraduate Course[220, 221]	At different universities determined each year	R	B	30	Lecture or panel	Unknown	C; 5 days	Nil

9. ENDOCRINOLOGY

9 P 01013	Dynamics of Endocrine Disease[5, 53]	Institute for Metabolic Research of the Highland Alameda County Hospital 2701 14th Ave., Oakland 6, Calif.	S	B	45	Small group discussion Lecture or panel	1/30/56	C; 1 wk.	100
9 P 03752	Seventh Postgraduate Assembly in Endocrinology and Metabolism[5, 54, 55]	Indiana University Medical Center Indiana State Board of Health Building, Indianapolis	R	B	35	Clinical case work Lecture or panel Demonstration	9/20/55	C; 5½ days	100
9 P 01807	Postgraduate Assembly in Endocrinology[300, 5]	Indiana University School of Medicine 1100 W. Michigan St., Indianapolis	S	B	Unknown	Lecture or panel Demonstration	9/20/55	C; 5½ days	100
9 P 02167	Metabolism and Endocrinology[27]	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	B	30	Lecture or panel Demonstration	3/56	C; 5 days	50
9 P 02322	Endocrinology for General Physicians[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	4/16/56	C; 3 days	25
9 P 02785	Metabolic Endocrinology[7, 8]	Kings County Hospital Brooklyn, N. Y.	R	G	15	Clinical case work Lecture or panel	10/55	I; 1½ hr. weekly for 10 wk. Tuesdays	20
9 P 02791	Medical and Gynecologic Endocrinology[7, 8]	Jewish Hospital Brooklyn, N. Y.	R	G	10	Clinical case work Lecture or panel	10/55	I; 1 hr. weekly for 10 wk. Mondays	20
9 P 03505	Endocrine disease[5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	7	Clinical case work Small group discussion	2/ 9/56	C; 1 day	15
9 P 02793	Medical and Gynecologic Endocrinology[7, 8]	Jewish Hospital Brooklyn, N. Y.	R	G	10	Clinical case work Lecture or panel	4/56	I; 1 hr. weekly for 10 wk. Mondays	20
9 P 03300	549-A Endocrinology[9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	23	Lecture or panel Demonstration	4/ 9/56	I; 1 hr. 3 times weekly for 8 wk. Mondays, Thursdays, Fridays	40
9 P 02955	Endocrinology DM1036[40]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	Unknown	Small group discussion Demonstration	Anytime	C; 2 wk.	100
9 P 01190	Thyroid Diseases[206, 46]	The University of Texas Postgraduate School of Medicine, Corpus Christi Division Corpus Christi, Texas	R	B	6	Lecture or panel	11/55	C; 1 day	10
9 P 01165	Endocrinology	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	B	24	Lecture or panel	1/56	C; 3 days	25

10. ENDOSCOPY

10 P 01605	One Week Advanced Course in Gastroscopy and Gastroenterology[5, 199]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	S	25	Laboratory work Clinical case work	9/12/55	C; 1 wk.	150
10 P 01635	10 Day Practical Course in Cystoscopy[5, 23]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Clinical case work Small group discussion	9/12/55	C; 10 days	150

References will be found on pages 1129-1131.

Postgraduate Continuation Co Physicians—Sept. 1, 1955, to Aug. 31, 1956 ontinued

12. FRACTURES—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
12 P 01630	Course 3—Fractures and Traumatic Surgery[5, 127]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	86	Laboratory work Clinical case work	3/12/56	C; 2 wk.	150
12 P 01685	Fractures[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	3/21/56	I; 6 hr. weekly for 10 wk. Wednesdays	125
12 P 01631	Course 3—Fractures and Traumatic Surgery[5, 127]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	86	Laboratory work Clinical case work	6/18/56	C; 2 wk.	150
12 P 01684	Fractures[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	9/21/55	I; 6 hr. weekly for 10 wk. Wednesdays	125
12 P 01632	Course 2—Clinical Fractures[5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work Operative surgery	Arranged	C; 1 wk.	50
12 P 02308	Fractures for General Physicians[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	11/21/55	C; 3 days	25
12 P 02964	Fractures and Allied Trauma DF1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Laboratory work Lecture or panel	Fall and Spring	C; 4 wk.	200
12 P 04104	Fractures and Dislocations[51, 5]	University of Tennessee College of Medicine 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	4/25/56	C; 3 days	50
12 P 04186	Fractures[200]	The University of Texas Postgraduate School of Medicine State Medical Association Library Building, Austin, Texas	R	G	16	Lecture or panel	1/16/56	I; 2 hr. weekly for 8 wk. Mondays	25
12 P 04169	Fractures	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	G	24	Lecture or panel	3/56	C; 3 days	25

13. GASTROENTEROLOGY

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
13 P 01221	846: Seminars in Advanced Gastroenterology	University of Southern California School of Medicine Medical Research Building, 2025 Zonal Ave., Los Angeles 33	R	B	24	Small group discussion Lecture or panel	Unknown	I; 2 hr. weekly for 12 wk.	50
13 P 01726	Gastroenterology[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
13 P 01597	Gastroenterology[5, 26]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	10/24/55	C; 2 wk.	100
13 P 02885	Postgraduate Gastroenterology[5, 213, 263]	Hotel Shoreland 5454 S. Shore Drive, Chicago 15	R	B	18	Lecture or panel	10/27/55	C; 3 days	35 to members
13 P 01727	Gastroenterology[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	3/21/56	I; 2 hr. weekly for 10 wk. Wednesdays	100
13 P 01598	Gastroenterology[5, 26]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	5/14/56	C; 2 wk.	100
13 P 01891	Gastroenterology[40]	University of Kansas Medical Center 39th and Rainbow Boulevard, Kansas City 12, Kan.	S	B	14	Clinical case work Lecture or panel	1/25/56	C; 2 days	30
13 P 02173	Diseases of the Gastro-Intestinal Tract[57]	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	B	40	Lecture or panel Demonstration	4/56	C; 5 days	50
13 P 02309	Gastroenterology for General Physicians[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	12/ 1/55	C; 3 days	25
13 P 02847	Med PM 70—Gastroenterology[31]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	56	Clinical case work Small group discussion Lecture or panel	9/13/55	I; 3½ hr. weekly for 16 wk. Tuesdays	75

13 P 03510	Gastroenterology [5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	14	Clinical case work Small group discussion	10/12/55	C; 2 days	30
13 P 02770	Gastroenterology [7, 8]	Greenpoint Hospital Brooklyn, N. Y.	R	G	14	Lecture or panel	10/55	I; 1 hr. twice weekly for 7 wk. Tuesdays, Wednesdays	20
13 P 02800	Clinical Gastroenterology [7, 8]	Jewish Hospital Brooklyn, N. Y.	R	G	8	Lecture or panel Demonstration	10/55	I; 1 hr. weekly for 8 wk. Mondays	20
13 P 03325	5435-A Gastroscopy and Flexible Tube Esophagoscopy [13]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	36	Clinical case work Small group discussion	11/55	I; 1 hr. 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	200
13 P 02818	Med PM 73 Advanced Gastroenterology [58]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	56	Laboratory work Clinical case work Small group discussion	1/17/56	I; 3½ hr. weekly for 16 wk. Tuesdays	75
13 P 04488	5435-A Gastroscopy and Flexible Tube Esophagoscopy [13]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	36	Clinical case work Small group discussion	3/56	I; 1 hr. 3 times weekly for 12 wk. Mondays, Wednesdays, Fridays	200
13 P 03302	5411-A Gastroenterology [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	24	Lecture or panel Demonstration	4/11/56	I; 3 hr. weekly for 8 wk. Wednesdays	40
13 P 02638	Medicine PM 45—Gastroenterology [108]	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	30	Clinical case work Lecture or panel	4/16/56	C; 1 wk.	75
13 P 02789	Gastroscopy [7, 50]	Greenpoint Hospital Brooklyn, N. Y.	R	G	15	Lecture or panel Demonstration	4/56	I; 2½ hr. weekly for 6 wk. Thursdays	30
13 P 02058	Gastroscopy DM1066 [8]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	Unknown	Clinical case work	Anytime	Specially arranged	200
13 P 02059	Gastroscopy (Advanced) DM1067	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	20	Small group discussion Lecture or panel	Anytime	Specially arranged	200
13 P 02063	Gastroenterology DM1106	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	Unknown	Small group discussion Lecture or panel	Fall and Spring	Specially arranged	100
13 P 03144	Clinical Gastroenterology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	60	Laboratory work Clinical case work	Arranged	Specially arranged	75
13 P 03171	Clinical Gastroenterology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	60	Laboratory work Clinical case work	Arranged	Specially arranged for 4 wk.	75
13 P 03636	Massive Gastroduodenal Bleeding [202]	Academy of Medicine of Cleveland and Cuyahoga County 2009 Adelbert Rd., Cleveland 6	S	B	3	Lecture or panel	1/20/56	C; 1 day	Nil
13 P 04109	Gastroenterology [51, 5]	University of Tennessee College of Medicine 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	3/30/56	C; 2 days	50

14. GENERAL MEDICINE

14 P 01013	Black Belt Postgraduate Seminar [60]	Black Belt Postgraduate Seminar Society Selma, Ala.	R	G	3	Lecture or panel	9/55	C; 1 day	Nil
14 P 01017	West Alabama Postgraduate Seminar [60]	West Alabama Postgraduate Seminar Society Winfield, Ala.	R	G	3	Lecture or panel	10/55	C; 1 day	Nil
14 P 01014	Black Belt Postgraduate Seminar [60]	Black Belt Postgraduate Seminar Society Selma, Ala.	R	G	3	Lecture or panel	11/55	C; 1 day	Nil
14 P 01012	Alabama Academy of General Practice Seminar [60]	Medical College of Alabama 1919 S. Seventh Ave., Birmingham, Ala.	R	G	10	Lecture or panel Demonstration	1/18/56	Specially arranged	Nil
14 P 01002	Alabama Academy of General Practice Postgraduate Seminar [60]	Medical College of Alabama 619 S. 19th St., Birmingham, Ala.	R	G	16	Clinical case work	1/56	C; 2 wk.	Nil
14 P 01015	Black Belt Postgraduate Seminar [60]	Black Belt Postgraduate Seminar Society Selma, Ala.	R	G	3	Lecture or panel	2/56	C; 1 day	Nil

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Phy —Sept. 1, Aug. 31, 1956—Continued

14. GENERAL MEDICINE—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
14 P 01018	West Alabama Postgraduate Seminar [60]	West Alabama Postgraduate Seminar Society Winfield, Ala.	R	G	3	Lecture or panel	2/56	C; 1 day	Nil
14 P 01024	West Alabama Postgraduate Seminar [60]	West Alabama Postgraduate Seminar Society Winfield, Ala.	R	G	3	Lecture or panel	4/56	C; 1 day	Nil
14 P 01016	Black Belt Postgraduate Seminar [60]	Black Belt Postgraduate Seminar Society Selma, Ala.	R	G	3	Lecture or panel	5/56	C; 1 day	Nil
14 P 01025	West Alabama Postgraduate Seminar [60]	West Alabama Postgraduate Seminar Society Winfield, Ala.	R	G	3	Lecture or panel	6/56	C; 1 day	Nil
14 P 01011	Alabama Academy of General Practice Seminar [60]	Medical College of Alabama 1919 S. Seventh Ave., Birmingham, Ala.	R	G	10	Lecture or panel Demonstration	8/17/56	Specially arranged	Nil
14 P 01003	Alabama Academy of General Practice Postgraduate Seminar [60]	Medical College of Alabama 619 S. 19th St., Birmingham, Ala.	R	G	16	Clinical case work	8/56	C; 2 wk.	Nil
14 P 01005	John A. Andrew Clinical Course	John A. Andrew Memorial Hospital Tuskegee Inst. Makon, Ala.	R	B	28	Clinical case work Lecture or panel	Unknown	C; 4 days	15
14 P 01148	Saint John's Hospital Postgraduate Assembly [61]	Saint John's Hospital 1328 22nd St., Santa Monica, Calif.	R	B	28	Lecture or panel Demonstration	9/12/55	C; 3 wk.	10
14 P 01166	Stockton Postgraduate Study Club [206, 207]	Stockton State Hospital North California St., Stockton, Calif.	R	G	12	Lecture or panel	9/15/55	I; 1½ hr. weekly for 2½ mo. Thursdays	10
14 P 01151	Annual Post-Graduate Assembly [62]	San Diego County General Hospital North End of Front Street, San Diego 3, Calif.	S	B	48	Lecture or panel	9/21/55	C; 2 wk.	Nil
14 P 01109	Postgraduate Preceptorship in Cardiology for the General Practitioner [63]	Various out-patient clinics in Los Angeles	S	G	20	Clinical case work Small group discussion	9/55	I; Approximately 2 hr. weekly for 12 wk. varying days	15
14 P 01087	General Medicine [19]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	18	Small group discussion Lecture or panel	10/ 4/55	I; 1½ hr. weekly for 12 wk. Tuesdays	50
14 P 04534	California North Coast Circuit Lecture Course [5, 173, 316]	In district	R	B	16	Lecture or panel	10/17/55	I; 2 hr. weekly for 8 wk.	25
14 P 04536	California Sacramento Valley Circuit Lecture Course [5, 173, 316]	In district	R	B	16	Lecture or panel	10/17/55	I; 2 hr. weekly for 8 wk.	25
14 P 01093	Medical Clinics [64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	18	Clinical case work Small group discussion	1/ 8/56	I; 1 hr. weekly for 18 wk. Tuesdays	50
14 P 04537	California Southern Counties Medical and Surgical Institute [54, 5, 316]	In district	R	B	Unknown	Lecture or panel	1/19/56	C; 2 days	10
14 P 01058	California West Coast Counties Medical and Surgical Institute [54, 5, 316]	In district	R	B	Unknown	Lecture or panel	3/ 1/56	C; 2 days	10
14 P 01059	California North Coast Counties Medical and Surgical Institute [54, 5, 316]	In district	R	B	Unknown	Lecture or panel	4/ 5/56	C; 2 days	10
14 P 01060	California San Joaquin Valley Counties Medical and Surgical Institute [5, 54, 316]	In district	R	B	Unknown	Lecture or panel	4/19/56	C; 2 days	10
14 P 01061	California Sacramento Valley Counties Medical and Surgical Institute [5, 54, 316]	In district	R	B	Unknown	Lecture or panel	6/13/56	C; 2 days	10
14 P 01132	General Medicine [173]	Mercy Hospital Hillcrest Drive, San Diego, Calif.	R	B	50	Lecture or panel	7/56	I; 1 hr. weekly for 50 wk. Saturdays	Nil
14 P 01257	Clinical Pharmacology and Therapeutics [65]	University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 20	R	B	24	Lecture or panel Demonstration	11/ 7/55	C; 3 days	30
14 P 01258	Electrolyte and Fluid Balance	University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 20	R	B	20	Lecture or panel Demonstration	11/10/55	C; 3 days	30

14 P 01259	General Practice Review [60]	University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 20	R	G	45	Lecture or panel Demonstration	1/16/56	C; 6 days	60
14 P 01511	Midwinter Postgraduate Clinics	Colorado State Medical Society 835 Republic Bldg., Denver 2	R	G	Unknown	Clinical case work Lecture or panel	2/14/56	C; 3 days	5
14 P 01261	Seventh Annual Colorado Intern-Resident Clinics	University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 20	S	B	16	Lecture or panel	6/56	C; 2 days	Nil
14 P 01359	Differential Diagnosis and Therapeutics for General Practitioners [282, 283, 5, 284, 285]	Wilmington General Hospital Chestnut and Broom Streets, Wilmington, Del.	R	G	30	Small group discussion Lecture or panel	9/14/55	I; 3 hr. weekly for 10 wk. Wednesdays	50
14 P 01353	General Medicine [320, 5]	George Washington University Hospital 901 23rd St., N. W., Washington 7, D. C.	R	B	30	Lecture or panel	3/19/56	C; 5 days	75
14 P 01382	Recent Advances in Diagnosis and Therapy [250]	Mt. Sinai Hospital of Greater Miami 4300 Alton Rd., Miami Beach, Fla.	S	B	24	Lecture or panel	5/19/55	C; 4 days	20
14 P 01375	Not determined [5, 304, 383]	Hotel George Washington Jacksonville 4, Fla.	S	S	14	Lecture or panel	6/21/56	C; 2½ days	25
14 P 01374	24th Annual Graduate Short Course [5, 302, 383]	Hotel George Washington Jacksonville 4, Fla.	R	G	30	Lecture or panel	6/25/56	C; 5 days	10
14 P 02117	Medicine for Today [301, 302, 5]	Mennonite Hospital Bloomington, Ill.	R	G	24	Lecture or panel	10/ 4/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02113	Medicine for Today [301, 302, 5]	St. Joseph Hospital Joliet, Ill.	R	G	24	Lecture or panel	10/ 4/55	I; 2 hr. weekly for 12 wk. Tuesdays	40
14 P 02114	Medicine for Today [301, 302, 5]	Hinsdale Sanatarium and Hospital Hinsdale, Ill.	R	G	24	Lecture or panel	10/ 5/55	I; 2 hr. weekly for 12 wk. Wednesdays	40
14 P 02115	Medicine for Today [301, 302, 5]	Englewood Hospital Chicago	R	G	24	Lecture or panel	10/ 5/55	I; 2 hr. weekly for 12 wk. Wednesdays	40
14 P 02111	Medicine for Today [301, 302, 5]	Illini Union Building 715 S. Wood St., Chicago 4	R	G	24	Lecture or panel	10/ 5/55	I; 2 hr. weekly for 12 wk. Wednesdays	40
14 P 02109	Medicine for Today [301, 302, 5]	Swedish Covenant Hospital Chicago	R	G	24	Lecture or panel	10/ 5/55	I; 2 hr. weekly for 12 wk. Wednesdays	40
14 P 02107	Medicine for Today [301, 302, 5]	St. Elizabeth Hospital Belleville, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02120	Medicine for Today [301, 302, 5]	Burnham City Hospital Champaign, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02112	Medicine for Today [301, 302, 5]	St. Elizabeth Hospital Danville, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02106	Medicine for Today [301, 302, 5]	TB Sanatarium Edwardsville, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02121	Medicine for Today [301, 302, 5]	St. Anthony Hospital Effingham, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02110	Medicine for Today [301, 302, 5]	Community Hospital Geneva, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02108	Medicine for Today [301, 302, 5]	Elks Club Herrin, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02116	Medicine for Today [301, 302, 5]	Public Hospital Moline, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02118	Medicine for Today [301, 302, 5]	St. Anthony Hospital Rockford, Ill.	R	G	24	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 12 wk. Thursdays	40
14 P 02119	Medicine for Today [301, 302, 5]	Memorial Hospital Elmhurst, Ill.	R	G	24	Lecture or panel	10/ 7/55	I; 2 hr. weekly for 12 wk. Fridays	40
14 P 01524	Clinical Conference [327]	Palmer House Chicago	R	B	30	Lecture or panel Demonstration	2/28/56	C; 4 days	5 to nonmembers
14 P 01828	*Refresher Course for the* General Physician [11]	State University of Iowa College of Medicine Iowa City	R	G	30	Small group discussion Lecture or panel	2/15/56	C; 4 days	40
14 P 01877	General Practice Postgraduate Course [5, 67, 68]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	R	G	28	Lecture or panel Demonstration	10/55	I; 4 hr. every 4 wk. for 6 mo. Thursdays	10
14 P 01880	Circuit Type Postgraduate Course [5, 43, 60]	Hospital Salina, Kan.	R	B	33	Clinical case work Lecture or panel	11/29/55	I; 5½ hr. every 4 wk. for 5 mo. Tuesdays	30
14 P 01884	Circuit Type Postgraduate Course [5, 43, 60]	Hospital Concordia, Kan.	R	B	33	Clinical case work Lecture or panel	11/29/55	I; 5½ hr. every 4 wk. for 5 mo. Tuesdays	30
14 P 01881	Circuit Type Postgraduate Course [5, 43, 60]	Hospital Hutchinson, Kan.	R	B	33	Clinical case work Lecture or panel	11/30/55	I; 5½ hr. every 4 wk. for 5 mo. Wednesdays	30

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, ig. 31, 1956—Continued

14. GENERAL MEDICINE—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
14 P 01885	Circuit Type Postgraduate Course[5, 43, 69]	Country Club Colby, Kan.	R	B	33	Clinical case work Lecture or panel	11/30/55	I; 5½ hr. every 4 wk. for 5 mo. Wednesdays	30
14 P 01882	Circuit Type Postgraduate Course[5, 43, 69]	Hospital Winfield, Kan.	R	B	33	Clinical case work Lecture or panel	12/ 1/55	I; 5½ hr. every 4 wk. for 5 mo. Thursdays	30
14 P 01886	Circuit Type Postgraduate Course[5, 43, 69]	Hospital Hays, Kan.	R	B	33	Clinical case work Lecture or panel	12/ 1/55	I; 5½ hr. every 4 wk. for 5 mo. Thursdays	30
14 P 01883	Circuit Type Postgraduate Course[5, 43, 69]	Hospital Parsons, Kan.	R	B	33	Clinical case work Lecture or panel	12/ 2/55	I; 5½ hr. every 4 wk. for 5 mo. Fridays	30
14 P 01887	Circuit Type Postgraduate Course[5, 43, 69]	Hospital Dodge City, Kan.	R	B	33	Clinical case work Lecture or panel	12/ 2/55	I; 5½ hr. every 4 wk. for 5 mo. Fridays	30
14 P 01888	Circuit Type Postgraduate Course[5, 43, 69]	Hospital Atchison, Kan.	R	B	33	Clinical case work Lecture or panel	12/ 6/55	I; 5½ hr. every 4 wk. for 5 mo. Tuesdays	30
14 P 01889	Circuit Type Postgraduate Course[5, 43, 69]	Hospital Topeka, Kan.	R	B	33	Clinical case work Lecture or panel	12/ 7/55	I; 5½ hr. every 4 wk. for 5 mo. Wednesdays	30
14 P 01890	Circuit Type Postgraduate Course[5, 43, 69]	Hospital Emporia, Kan.	R	B	33	Clinical case work Lecture or panel	12/ 8/55	I; 5½ hr. every 4 wk. for 5 mo. Thursdays	30
14 P 01910	New Orleans Graduate Medical Assembly[239]	Municipal Auditorium New Orleans	R	B	40	Lecture or panel Demonstration	2/27/56	C; 4 days	20
14 P 01944	Advances in Medicine and General Practice[295]	Doctors Hospital, Postgraduate Institute 2724 N. Charles St., Baltimore 18	R	G	18	Small group discussion Lecture or panel	10/ 7/55	I; 3 hr. weekly for 6 wk. Tuesdays, Fridays	5
14 P 02104	General Medicine[70, 4, 5]	St. Luke's Hospital New Bedford, Mass.	R	B	24	Lecture or panel	9/ 7/55	I; 2 hr. weekly for 12 wk. Wednesdays	48
14 P 02103	General Medicine[70, 181, 5]	Truesdale Hospital, St. Anne's Hospital, Union Hospital Fall River, Mass.	R	B	30	Lecture or panel	9/14/55	I; 3 hr. weekly for 10 wk. Wednesdays	40
14 P 02097	Modern Concepts of Diagnosis and Therapy of Everyday Practice[5, 70, 71]	Lemuel Shattuck Hospital Boston	R	B	50	Lecture or panel	9/21/55	I; 2 hr. weekly for 25 wk. Wednesdays	100
14 P 02101	Postgraduate Medicine[70, 4, 5]	St. Luke's Hospital Pittsfield, Mass.	R	B	20	Lecture or panel	9/28/55	I; 2 hr. weekly for 10 wk. Wednesdays	40
14 P 02102	General Medicine[70, 180, 5]	Norfolk County Hospital Braintree, Mass.	R	B	24	Lecture or panel	10/ 5/55	I; 2 hr. weekly for 12 wk. Wednesdays	48
14 P 02098	Modern Concepts of Diagnosis and Therapy of Everyday Practice[5, 72, 70]	Holyoke Soldiers Home Holyoke, Mass.	R	B	20	Lecture or panel	10/14/55	I; 2 hr. weekly for 10 wk. Fridays	40
14 P 02099	General Medicine[5, 70, 4]	Burbank Hospital Fitchburg, Mass.	R	B	18	Lecture or panel	11/55	I; 3 hr. monthly for 6 mo. Wednesdays	36
14 P 02100	General Medicine[5, 4, 70]	Salem Hospital Salem, Mass.	R	B	24	Lecture or panel	1/ 4/56	I; 2 hr. weekly for 12 wk. Wednesdays	48
14 P 02175	Extramural Postgraduate Course[215, 41]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Alpena, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02176	Extramural Postgraduate Course[215, 52]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Bay City, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02177	Extramural Postgraduate Course[215, 27]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Cadillac, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02147	Extramural Postgraduate Course[215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Calumet, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil

14 P 02183	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Escanaba, Mich.	R	G	3	Clinic	Fall, 1955	C; 3 hr.	Nil
14 P 02178	Extramural Postgraduate Course [215, 85]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Flint, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02185	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Iron Mountain, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02187	Extramural Postgraduate Course [215, 41]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Ironwood, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02179	Extramural Postgraduate Course [215, 85]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Jackson, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02180	Extramural Postgraduate Course [215, 85]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Lansing, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02188	Extramural Postgraduate Course [215, 27]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Marquette, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02184	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Menominee, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02181	Extramural Postgraduate Course [215, 45]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Muskegon, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02182	Extramural Postgraduate Course [215, 52]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Port Huron, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02186	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Sault Ste. Marie, Mich.	R	G	3	Lecture or panel	Fall, 1955	C; 3 hr.	Nil
14 P 02144	General Medicine [221, 5]	The Grace Hospital 4160 John Rd., Detroit 1	R	G	35	Clinical case work	10/ 1/55	I; 1¼ hr. weekly for 28 wk. Tuesdays	30
14 P 02145	Ninth Annual Fall Postgraduate Clinic [255, 257]	Sheraton-Cadillac Hotel Washington Boulevard at Michigan Avenue, Detroit	R	G	12	Lecture or panel	11/ 9/55	C; 2 days	Nil
14 P 02146	Third Symposium on Office Procedures for the General Physician [255, 256]	Sheraton-Cadillac Hotel Washington Boulevard at Michigan Avenue, Detroit	R	G	5	Lecture or panel	2/ 1/56	C; 1 day	Nil
14 P 01444	Extramural Postgraduate Course [215, 41]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Alpena, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 01445	Extramural Postgraduate Course [215, 52]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Bay City, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02135	Extramural Postgraduate Course [215, 27]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Cadillac, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02418	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Calumet, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02350	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Escanaba, Mich.	R	G	3	Clinic	Spring, 1956	C; 3 hr.	Nil

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		14. GENERAL MEDICINE—Continued							
14 P 04285	Extramural Postgraduate Course [215, 85]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Flint, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 04316	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Iron Mountain, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 04318	Extramural Postgraduate Course [215, 41]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Ironwood, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 04286	Extramural Postgraduate Course [215, 85]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Jackson, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02089	Extramural Postgraduate Course [215, 85]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Lansing, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02417	Extramural Postgraduate Course [215, 27]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Marquette, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 04315	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Menominee, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02349	Extramural Postgraduate Course [215, 45]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Muskegon, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02090	Extramural Postgraduate Course [215, 82]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Port Huron, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 04317	Extramural Postgraduate Course [215, 20]	Department of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich. At: Sault Ste. Marie, Mich.	R	G	3	Lecture or panel	Spring, 1956	C; 3 hr.	Nil
14 P 02170	Recent Advances in Therapeutics [82]	Dept. of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich.	R	B	30	Lecture or panel Demonstration	4/56	C; 5 days	50
14 P 02289	Annual Fall Refresher [270]	Radisson Hotel Seventh Street South, Minneapolis	R	G	7	Lecture or panel	10/19/55	C; 1 day	Nil
14 P 02305	Techniques in General Practice [33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Small group discussion Demonstration	10/20/55	C; 3 days	25
14 P 01778	General Medicine [73, 74]	Hotel Jefferson St. Louis	R	G	17	Lecture or panel	9/28/55	C; 3 days	5
14 P 02371	Missouri Academy of General Practice Annual Meeting [277, 275]	Governor Hotel Jefferson City, Mo.	R	G	10	Lecture or panel	10/26/55	C; 2 days	Nil
14 P 02370	Annual Fall Clinical Conference [5, 75]	Kansas City Southwest Clinical Society 3036 Gillham Road, Kansas City 8, Mo.	R	B	24	Lecture or panel	10/55	C; 4 days	20
14 P 02372	Missouri State Medical Association Annual Meeting [276]	Jefferson Hotel St. Louis	R	B	16	Clinical case work Lecture or panel	4/ 9/56	C; 3 days	Nil
14 P 02383	General Practice Meetings [251]	University of Missouri School of Medicine Columbia, Mo.	R	B	10	Lecture or panel	Unknown	I; 2 hr. monthly for 5 mo. Thursdays	Unknown
14 P 02384	Postgraduate Course in Medicine and Surgery [252, 251]	Burge Hospital Springfield, Mo.	R	B	24	Lecture or panel	Unknown	I; 4 hr. monthly for 6 mo. Wednesdays	Unknown

[illegible]	[illegible] Assembly of the Omaha Mid-West Clinical Society	Omaha Mid-West Clinical Society 1031 Medical Arts Bldg., Omaha	R	B	39	Lecture or panel Exhibits	10/24/55	C; 4 days	7.50
14 P 02482	Visiting Chiefs Pro Tem [78]	Atlantic City Hospital 26 S. Ohio Ave., Atlantic City, N. J.	R	B	480	Clinical case work Lecture or panel	1/ 3/56	I; 2 hr. daily for 5 days weekly for 48 wk.	Nil
14 P 03500	Recent Advances in Clinical Practice [8]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	39	Clinical case work Small group discussion	9/12/55	C; 1 wk.	75
14 P 02895	Postgraduate Radio Program of New York Academy of Medicine [271]	Over New York radio station WNYS-FM New York	R	G	52	Lecture or panel	9/55	I; 1 hr. weekly for 52 wk. Thursdays	Nil
14 P 03501	Medicine [5]	State University of New York, Upstate Medical Center 766 Irving Ave., Syracuse, N. Y.	R	B	28	Lecture or panel Demonstration	10/ 6/55	I; 4 hr. weekly for 7 wk. Thursdays	15
14 P 03548	Hypertension and Nephritis [7, 8]	Jewish Hospital Brooklyn, N. Y.	R	G	8	Lecture or panel	10/55	I; 1 hr. weekly for 8 wk. Wednesdays	20
14 P 02894	Monthly Panel Meetings on Therapeutics for the General Physician	The New York Academy of Medicine 2 E. 103rd St., New York 29	R	G	9	Panel	11/ 4/55	I; 1½ hr. monthly for 6 mo. Fridays	Nil
14 P 02478	Recent Advances in Clinical Medicine	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	20	Small group discussion Lecture or panel	1/12/56	C; 2½ days	25
14 P 02473	Postgraduate Clinical Seminar	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	6	Small group discussion Lecture or panel	1/12/56	C; 1 day	10
14 P 02788	Hypertension and Nephritis [7, 8]	Jewish Hospital Brooklyn, N. Y.	R	G	8	Lecture or panel	4/56	I; 1 hr. weekly for 8 wk. Wednesdays	20
14 P 03320	5430-A Review Course in General Medicine [79]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	70	Clinical case work Lecture or panel	7/11/56	C; 10 days	100
14 P 02900	Physical Diagnosis DM1076	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	20	Clinical case work Small group discussion	7/56 or 8/56	Specially arranged	100
14 P 03139	General Medicine	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	24	Laboratory work Clinical case work	Arranged	Specially arranged	100
14 P 03595	Postgraduate Course in General Medicine [5, 77]	Grace Hospital Morganton, N. C.	R	B	18	Lecture or panel	9/21/55	I; 3 hr. weekly for 6 wk. Wednesdays	20
14 P 03596	Postgraduate Course in General Medicine [5, 77]	Memorial Mission Hospital Asheville, N. C.	R	B	18	Lecture or panel	9/23/55	I; 3 hr. weekly for 6 wk. Thursdays	20
14 P 03597	Postgraduate Course in General Medicine [5, 77]	North Carolina Memorial Hospital Chapel Hill, N. C.	R	B	12	Lecture or panel	10/ 5/55	I; 1½ hr. weekly for 8 wk. Wednesdays	10
14 P 03568	Postgraduate Medical Cruise [281]	M. S. "Stockholm" Sponsored by Duke University School of Medicine Durham, N. C.	S	B	25	Lecture or panel	11/23/55	C; 12 days	Cost of the cruise
14 P 03598	Postgraduate Course in General Medicine [5, 77]	Roanoke-Chowan Hospital Ahoskie, N. C. Chowan Hospital Edenton, N. C. Virginia Dare Hotel Elizabeth City, N. C.	R	B	18	Lecture or panel	1/11/56	I; 3 hr. weekly for 6 wk. Wednesdays	20
14 P 03599	Postgraduate Course in General Medicine [5, 77]	N. C. Memorial Hospital Chapel Hill, N. C.	R	B	12	Lecture or panel	2/15/56	I; 1½ hr. weekly for 8 wk. Wednesdays	10
14 P 03586	Audio-Visual Postgraduate Instruction Course (During Pinehurst Convention)	Annual Meeting, Medical Society of North Carolina Raleigh, N. C.	S	G	9	Audiovisual	5/ 1/56	Specially arranged	Nil
14 P 03600	Duke Medical Postgraduate Course [156, 8]	Duke University School of Medicine Durham, N. C.	R	G	32	Clinical case work Small group discussion	6/18/56	C; 4 days	25
14 P 03034	The Medical Management of the Problem Drinker [282]	Academy of Medicine of Cleveland and Cuyahoga County 2009 Adelbert Rd., Cleveland 6	S	B	3	Lecture or panel	10/21/55	C; 1 day	Nil
14 P 03802	Symposium on Therapeutics [284]	Four selected centers in Western Oregon	R	B	5	Lecture or panel Discussion	3/56	C; 1 day	Nil
14 P 03883	Postgraduate Telephone Teaching Program [280]	County society meeting room to be received via telephone in Pennsylvania	R	B	1	Lecture or panel	10/55	....	Nil
14 P 03884	Postgraduate Telephone Teaching Program [280]	County society meeting room to be received via telephone in Pennsylvania	R	B	1	Lecture or panel	11/55	....	Nil

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		14. GENERAL MEDICINE—Continued							
14 P 03869	Postgraduate Hospital Training Course [286, 287, 5]	To be given at six or seven Pennsylvania hospitals	S	G	90	Clinical case work Small group discussion	10/55	I; 6 hr. weekly for 15 wk. Varying days	50
14 P 03885	Postgraduate Telephone Teaching Program [286]	County society meeting room to be received via telephone in Pennsylvania	R	B	1	Lecture or panel	12/55	....	Nil
14 P 03886	Postgraduate Telephone Teaching Program [286]	County society meeting room to be received via telephone in Pennsylvania	R	B	1	Lecture or panel	1/56	....	Nil
14 P 02434	Postgraduate Telephone Teaching Program [286]	County society meeting room to be received via telephone in Pennsylvania	R	B	1	Lecture or panel	2/56	....	Nil
14 P 03993	Postgraduate Seminar [385]	Medical College of South Carolina 16 Lucas St., Charleston, S. C.	R	G	25	Lecture or panel Demonstration	11/ 1/55	C; 3 days	5
14 P 03998	Postgraduate Seminar [275]	Medical College of South Carolina Charleston, S. C.	R	B	16	Lecture or panel	11/55	C; 2 days	Nil
14 P 04097	Tennessee Valley Medical Assembly [80]	Read House Hotel West Ninth Street, Chattanooga, Tenn.	R	B	10	Lecture or panel	10/ 3/55	C; 2 days	15
14 P 04172	Clinical Seminars [206]	The University of Texas Postgraduate School of Medicine, San Angelo Division 219 S. Magdalen, San Angelo, Texas	R	B	18	Lecture or panel	9/11/55	I; 2 hr. monthly for 9 mo. Sundays	18
14 P 04152	Gall Bladder and Heart Disease [5, 317, 318]	Location varies on three year cycle from Texarkana to Shreveport to an east Texas city (Longview)	R	B	12	Lecture or panel	9/28/55	C; 2 days	5
14 P 04128	International Medical Assembly of Southwest Texas [258]	Municipal Auditorium San Antonio, Texas	R	B	18	Lecture or panel	1/23/56	C; 2½ days	20
14 P 04578	Prairie View A and M College Post-Graduate Medical Assembly [315]	Prairie View A. and M. College Prairie View, Texas	R	G	38	Clinical case work	3/ 5/56	C; 5 days	Nil
14 P 04486	Dallas Southern Clinical Society Spring Clinical Conference [5]	Dallas Southern Clinical Society 433 Medical Arts Bldg., Dallas, Texas	S	B	27	Lecture or panel	3/12/56	C; 3 days	25
14 P 04126	Postgraduate Medical Assembly of South Texas [217, 218]	Shamrock Hotel Houston, Texas	R	B	42	Lecture or panel	7/16/56	C; 3 days	20
14 P 04247	May Clinical Meeting	University of Vermont College of Medicine Burlington, Vt.	R	B	5	Lecture or panel	5/ 1/56	C; 1 day	Nil
14 P 04271	Conferences on General Medicine	University of Virginia School of Medicine Charlottesville, Va.	R	G	8	Clinical case work Lecture or panel	Unknown	Specially arranged	Nil
14 P 04289	Fluid and Electrolyte Balance [27]	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	26	Laboratory work Clinical case work	9/14/55	C; 3 days	45
14 P 04291	General Practice Clinic Day	University of Washington School of Medicine Health Sciences Building, Seattle	R	G	6	Lecture or panel	10/21/55	C; 1 day	Nil
14 P 04329	International Medical Assembly [260]	Interstate Postgraduate Medical Association of North America Gay Building, Madison 3, Wis.	R	G	28	Clinical case work Lecture or panel	11/14/55	C; 4 days	10
14 P 03987	Jackson Clinic Postgraduate Meeting	Tower of Health Methodist Hospital 309 W. Washington Ave., Madison, Wis.	S	G	4	Clinical case work	Unknown	C; 1 day	Nil
14 P 04459	Postgraduate Refresher Course	University of Toronto Medical Alumni Association Toronto 5, Canada	R	B	12	Clinical case work Lecture or panel	10/13/55	C; 2 days	Nil
14 P 04418	Refresher Course for General Practitioners [45]	Vancouver General Hospital Vancouver, British Columbia, Canada	R	G	18	Lecture or panel Theatre clinics	11/16/55	C; 3 days	15
14 P 04469	Refresher Course for General Practitioners [5]	Royal Victoria Hospital 687 Pine Ave., W., Montreal 2, Canada	R	G	5	Lecture or panel Demonstration	11/21/55	Specially arranged	50
14 P 04451	Postgraduate Refresher Course in General Medicine [382]	Ottawa Civic Hospital Carling Avenue, Ottawa, Ontario, Canada	R	B	18	Lecture or panel	5/56	C; 3 days	15
14 P 04403	Annual Refresher Course [5]	University of Alberta Faculty of Medicine	R	B	40	Clinical case work Lecture or panel	5/56	C; 5 wk.	10

15. GERIATRICS

15 P 01350	Geriatrics [326, 5]	George Washington University Hospital 901 23rd St., N. W., Washington 7, D. C.	R	B	30	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 17 wk. Thursdays	50
15 P 01354	Geriatrics [326, 5]	George Washington University Hospital 901 23rd St., N. W., Washington 7, D. C.	R	B	30	Lecture or panel	3/26/56	C; 5 days	75
15 P 02896	Problems of Aging [81]	The New York Academy of Medicine 2 E. 103rd St., New York 29	R	B	51	Clinical case work Lecture and panel	10/10/55	C; 10 days	10
15 P 02130	Graduate Symposium on Geriatric Medicine [82]	Hotel Roosevelt New York	S	B	16	Lecture or panel	11/30/55	C; 2 days	Nil
15 P 03315	5426-A Geriatrics [3]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	21	Lecture or panel Demonstration	1/25/56	C; 3 days	30

16. GYNECOLOGY

16 P 01116	Gynecology [5, 83]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	24	Small group discussion Lecture or panel	9/20/55	I; 2 hr. weekly for 12 wk. Tuesdays	60
16 P 01206	Gynecological and Obstetrical Conference [84]	University of California Extension 540 Powell St., San Francisco 22	R	B	12	Lecture or panel	10/20/55	C; 2 days	60
16 P 01096	Management of Infertility [64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	12	Lecture or panel Demonstration	1/ 5/56	I; 1½ hr. weekly for 8 wk. Thursdays	30
16 P 01141	Los Angeles Obstetrical and Gynecological Forum [180]	Ambassador Hotel 3400 Wilshire Blvd., Los Angeles 57	S	B	11	Lecture or panel	2/11/56	C; 2 days	20
16 P 01142	Obstetrical and Gynecological Assembly of Southern California [186]	Ambassador Hotel 3400 Wilshire Blvd., Los Angeles 57	S	S	23	Lecture or panel	2/13/56	C; 5 days	85
16 P 01117	Gynecology [5, 83]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	24	Small group discussion Lecture or panel	3/19/56	I; 2 hr. weekly for 12 wk. Tuesdays	60
16 P 01100	Gynecology [10]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	10	Lecture or panel	3/21/56	I; 1 hr. weekly for 10 wk. Wednesdays	30
16 P 01352	Obstetrics and Gynecology [326, 5]	George Washington University Hospital 901 23rd St., N. W., Washington 7, D. C.	R	B	30	Lecture or panel	3/12/56	C; 5 days	75
16 P 01508	Obstetrics and Gynecology Seminar [5, 85]	Walter Reed Army Medical Center Washington 12, D. C.	R	B	40	Clinical case work Lecture or panel	5/21/56	C; 5 days	Nil
16 P 01628	Three-Week Combined Course in Gynecology and Obstetrics [5, 201]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	100	Laboratory work Clinical case work	9/12/55	C; 3 wk.	225
16 P 01607	Practical and Didactic Course in Office Gynecology [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	16	Laboratory work Clinical case work	10/ 5/55	I; 4 hr. weekly for 4 wk. Wednesdays	100
16 P 01611	Gynecologic Surgery [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	10/ 5/55	I; 4 hr. weekly for 5 wk. Wednesdays	100
16 P 01526	Basic Principles and Recent Developments in Obstetrics and Gynecology [327, 53, 5]	Knickerbocker Hotel 163 E. Walton Place, Chicago	R	B	40	Lecture or panel	10/24/55	C; 1 wk.	75
16 P 01492	Obstetrical and Gynecological Surgical Care	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	15	Lecture or panel	10/31/55	I; 3 hr. daily for 5 days	5
16 P 01618	Vaginal Approach to Pelvic Surgery [5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	11/ 7/55	C; 1 wk.	100
16 P 01608	Practical and Didactic Course in Office Gynecology [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	16	Laboratory work Clinical case work	11/ 9/55	I; 4 hr. weekly for 4 wk. Wednesdays	100
16 P 01615	Gynecologic Surgery [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	11/ 9/55	I; 4 hr. weekly for 5 wk. Wednesdays	100
16 P 01613	Course 2—Gynecology [5, 83]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	94	Laboratory work Clinical case work	11/28/55	C; 2 wk.	150

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

16. GYNECOLOGY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
16 P 01619	Vaginal Approach to Pelvic Surgery [5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	12/12/55	C; 1 wk.	100
16 P 04611	Practical and Didactic Course in Office Gynecology [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	16	Laboratory work Clinical case work	1/ 4/56	I; 4 hr. weekly for 4 wk. Wednesdays	100
16 P 04616	Gynecologic Surgery [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	1/ 4/56	I; 4 hr. weekly for 5 wk. Wednesdays	100
16 P 01620	Vaginal Approach to Pelvic Surgery [5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	2/ 6/56	C; 1 wk.	100
16 P 01614	Course 2—Gynecology [5, 83]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	94	Laboratory work Clinical case work	2/13/56	C; 2 wk.	150
16 P 01621	Vaginal Approach to Pelvic Surgery [5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	3/ 5/56	C; 1 wk.	100
16 P 04612	Practical and Didactic Course in Office Gynecology [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	16	Laboratory work Clinical case work	3/ 7/56	I; 4 hr. weekly for 4 wk. Wednesdays	100
16 P 04617	Gynecologic Surgery [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	3/ 7/56	I; 4 hr. weekly for 5 wk. Wednesdays	100
16 P 01615	Course 2—Gynecology [5, 83]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	94	Laboratory work Clinical case work	3/12/56	C; 2 wk.	150
16 P 01616	Course 2—Gynecology [5, 83]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	94	Laboratory work Clinical case work	4/16/56	C; 2 wk.	150
16 P 04618	Gynecologic Surgery [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	5/ 2/56	I; 4 hr. weekly for 5 wk. Wednesdays	100
16 P 04613	Practical and Didactic Course in Office Gynecology [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	16	Laboratory work Clinical case work	5/ 2/56	I; 4 hr. weekly for 4 wk. Wednesdays	100
16 P 01622	Vaginal Approach to Pelvic Surgery [5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	5/ 7/56	C; 1 wk.	100
16 P 01623	Vaginal Approach to Pelvic Surgery [5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	6/ 4/56	C; 1 wk.	100
16 P 01617	Course 2—Gynecology [5, 83]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	94	Laboratory work Clinical case work	6/11/56	C; 2 wk.	150
16 P 01825	Obstetrics and Gynecology Postgraduate Course [304]	State University of Iowa College of Medicine University Hospital Iowa City	R	B	11	Clinical case work Small group discussion	11/ 4/55	C; 1½ days	15
16 P 01862	Gynecology [86]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	S	B	18	Lecture or panel	11/ 7/55	C; 3 days	35
16 P 02027	Gynecology 2 [21, 310]	Free Hospital for Women 245 Pond Ave., Boston	R	B	120	Clinical case work Small group discussion	9/ 1/55	C; 4 wk.	150
16 P 02031	Gynecology 3 [52, 310]	Massachusetts General Hospital Fruit Street, Boston	R	B	78	Laboratory work Lecture or panel	9/12/55	C; 2 wk.	150
16 P 02006	Pathology of Obstetrics and Gynecology [112, 310]	Free Hospital for Women Cumberland Avenue, Brookline, Mass.	S	S	120	Laboratory work Lecture or panel	1/ 5/56	I; 6 hr. weekly for 5 mo. Thursdays	150
16 P 02028	Gynecology 2 [21, 310]	Free Hospital for Women 245 Pond Ave., Boston	R	B	120	Clinical case work Small group discussion	6/ 1/56	C; 4 wk.	150
16 P 02029	Gynecology 2 [21, 310]	Free Hospital for Women 245 Pond Ave., Boston	R	B	120	Clinical case work Small group discussion	7/ 2/56	C; 4 wk.	150

16 P 02030	Gynecology 2[81, 316]	Free Hospital for Women 245 Pond Ave., Boston	R	B	120	Clinical case work Small group discussion	8/ 1/56	C; 4 wk.	150
16 P 02164	Gynecology[81]	Dept. of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich.	R	B	20	Lecture or panel Demonstration	2/56	C; 3½ days	50
16 P 02321	Gynecology for Specialists[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	S	16	Lecture or panel	4/12/56	C; 3 days	25
16 P 03312	734-A Gynecology[87]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	320	Laboratory work Lecture or panel	9/ 6/55	C; 16 wk.	250
16 P 03331	560-A Diagnosis and Therapy of Malignant Neoplasms of the Female Genital Tract[88]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	288	Laboratory work Clinical case work	9/19/55	I; 4 hr. twice weekly for 9 mo. Mondays, Thursdays	300
16 P 03507	Gynecology[5]	University of Buffalo School of Medicine 3135 Main St., Buffalo	R	G	14	Clinical case work Small group discussion	9/28/55	C; 2 days	30
16 P 03137	Gynecology and Obstetrics Including Manikin Obstetrics and Operative Gynecology on the Cadaver	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	400	Laboratory work Clinical case work	10/ 3/55	C; 8 wk.	250
16 P 03337	567-A Gynecology and Endocrinology[89]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	42	Laboratory work Clinical case work	10/ 3/55	C; 6 days	125
16 P 03338	568-A Gynecological Cytology[87]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	32	Laboratory work Lecture or panel	10/ 4/55	I; 4 hr. weekly for 8 wk. Tuesdays, Thursdays	100
16 P 03334	566-A Culdoscopy[90]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	6	Clinical case work Didactic presentations	11/28/55	I; 2 hr. 3 times weekly for 1 wk. Mondays; Wednesdays, Fridays	50
16 P 03335	566-B Culdoscopy[90]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	6	Clinical case work Didactic presentations	1/30/56	I; 2 hr. 3 times weekly for 1 wk. Mondays; Wednesdays, Fridays	50
16 P 03333	565-A Electrical Modalities in Gynecology (Specialists)[91]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	20	Clinical case work	2/ 6/56	I; 2 hr. weekly for 5 wk. Mondays, Fridays	75
16 P 03339	569-A Surgical Anatomy as Applied to Gynecology[87]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	18	Dissection Lantern slides	2/14/56	I; 1½ hr. 3 times weekly for 4 wk. Tuesdays, Thursdays, Saturdays	175
16 P 03138	Gynecology and Obstetrics Including Manikin Obstetrics and Operative Gynecology on the Cadaver	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	400	Laboratory work Clinical case work	4/ 2/56	C; 8 wk.	250
16 P 03503	Postgraduate Course in Gynecology for General Practitioners[5, 6]	State University of New York, Upstate Medical Center 766 Irving Ave., Syracuse, N. Y.	S	G	33	Clinical case work Small group discussion	1/23/56	C; 5½ days	25
16 P 03336	566-C Culdoscopy[90]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	6	Clinical case work Didactic presentations	4/30/56	I; 2 hr. 3 times weekly for 1 wk. Mondays; Wednesdays, Fridays	50
16 P 03109	Culdoscopy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	6	Laboratory work Clinical case work	Arranged	Specially arranged	100
16 P 03133	Clinical Gynecology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	210	Laboratory work Clinical case work	Arranged	Specially arranged	75
16 P 03135	Clinical and Operative (Cadaver) Gynecology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	260	Laboratory work Clinical case work	Arranged	Specially arranged	175
16 P 01101	Office Gynecology[51, 5]	University of Tennessee College of Medicine 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	9/ 7/55	C; 3 days	50
16 P 01151	Genito Urinary Diseases[5, 317, 318]	Location varies on three year cycle from Texarkana to Shreveport to an east Texas city (Longview)	R	B	12	Lecture or panel	9/28/55	C; 2 days	5
16 P 01292	Obstetrics and Gynecology	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	Unknown	Lecture or panel Demonstration	Spring, 1956	C; 2 days	20

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

17. HEMATOLOGY

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
17 P 01261	Clinical Hematology [92]	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	S	S	45	Laboratory work Clinical case work	7/56	C; 6 days	75
17 P 01710	Clinical Hematology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
17 P 01711	Clinical Hematology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	3/21/56	I; 2 hr. weekly for 10 wk. Wednesdays	100
17 P 01610	Hematology [5, 28]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Laboratory work Clinical case work	6/11/56	C; 1 wk.	100
17 P 01753	Hematologic Diagnosis [58]	Michael Reese Hospital 29th Street and Ellis Avenue, Chicago 16	S	B	80	Laboratory work Clinical case work	7/18/56	C; 2 wk.	150
17 P 01831	Postgraduate Course on Hematology [307]	State University of Iowa College of Medicine Iowa City	R	B	6	Lecture or panel	11/10/55	C; 1 day	10
17 P 01873	Hematology [40, 27]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	S	B	14	Laboratory work Demonstration	3/15/56	C; 2 days	30
17 P 02168	Diseases of Blood and Blood-Forming Organs [67]	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	B	34	Laboratory work Lecture or panel	4/56	C; 5 days	50
17 P 02845	Med PM 66—Clinical Hematology [58]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	48	Laboratory work Clinical case work Lecture or panel	9/13/55	I; 3 hr. weekly for 16 wk. Tuesdays	75
17 P 02846	Med PM 67—Advanced Hematology [93]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	40	Laboratory work Clinical case work Lecture or panel	9/20/55	I; 2½ hr. weekly for 16 wk. Tuesdays	75
17 P 02629	Hematology PM 31—Hematology	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	24	Laboratory work	11/ 1/55	I; 3 hr. weekly for 8 wk. Tuesdays	50
17 P 03326	5436-A Hematology [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	35	Lecture or panel Demonstration	11/ 7/55	C; 5 days	75
17 P 01337	Med PM 66—Clinical Hematology [58]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	48	Laboratory work Clinical case work Lecture or panel	1/31/56	I; 3 hr. weekly for 16 wk. Tuesdays	75
17 P 01336	Med PM 67—Advanced Hematology [93]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	40	Laboratory work Clinical case work Lecture or panel	2/ 7/56	I; 2½ hr. weekly for 16 wk. Tuesdays	75
17 P 02628	Hematology PM 30—Laboratory Methods in Hematology [88]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	64	Laboratory work	2/27/56	C; 4 wk.	200
17 P 02630	Hematology PM 32—Laboratory Methods in Blood Banks [88]	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	24	Laboratory work	4/ 3/56	I; 4 hr. weekly for 6 wk. Tuesdays	50
17 P 03297	546-A Clinical Hematology [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	20	Lecture or panel Demonstration	4/10/56	I; 2½ hr. weekly for 8 wk. Mondays, Thursdays	40
17 P 02961	Hematology DM1086	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	20	Laboratory work Small group discussion	Anytime	I; 2½ hr. weekly for 8 wk. Tuesdays	50
17 P 03909	Clinical and Laboratory Hematology [190]	Bryn Mawr Hospital Bryn Mawr, Pa.	S	B	240	Laboratory work Lecture or panel	10/ 1/55	C; 6 wk.	200
17 P 03911	Clinical and Laboratory Hematology	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	240	Laboratory work Lecture or panel	12/ 1/55	C; 6 wk.	200
17 P 03912	Clinical and Laboratory Hematology	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	240	Laboratory work Lecture or panel	2/ 1/56	C; 6 wk.	200
17 P 03816	Hematology [31, 5]	Albert Einstein Medical Center, Northern Division York and Tabor roads, Philadelphia 41	R	G	25	Clinical case work Lecture or panel	Spring, 1956	I; 2½ hr. weekly for 10 wk. Wednesdays	75

17 P 03913	Clinical and Laboratory Hematology	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	210	Laboratory work Lecture or panel	1/ 1/56	C; 6 wk.	200
17 P 03921	Practical Pediatric Hematology [101, 100]	The Children's Hospital 1740 Bainbridge St., Philadelphia	R	B	21	Small group discussion Lecture or panel	6/56	C; 3 days	60
17 P 01176	Clinical Pathology [13, 200]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	88	Laboratory work	Arranged	Specially arranged for 2 wk.	25

18. INDUSTRIAL MEDICINE

18 P 01913	Industrial Medicine [94]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	R	B	16	Lecture or panel	4/12/56	C; 2 days	25
18 P 03281	483-A Industrial Medicine for Physicians [31]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	280	Lecture or panel Seminars	9/26/55	C; 8 wk.	250
18 P 03285	482-B Industrial Hygiene Laboratory [95]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work	9/55	Specially arranged	66
18 P 03287	4810-A Industrial Toxicology [58]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	Unknown	Lecture or panel Demonstration	9/55	Specially arranged	66
18 P 03282	481-A Medical Aspects of Compensation [96]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	35	Lecture or panel	10/31/55	C; 1 wk.	Unknown
18 P 03289	486-A Air Pollution [31]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	70	Lecture or panel	11/28/55	C; 2 wk.	60
18 P 03290	480-A Introduction to Radiological Safety [97]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	70	Lecture or panel	1/ 9/56	C; 2 wk.	60
18 P 01511	5133—A Tutorial Course in Internal Medicine [8, 101]	New York Postgraduate Medical School 550 First Ave., New York	S	G	6 mo.	Laboratory work Clinical case work	1/56	C; for 4 mo. or 6 mo.	100 mo.
18 P 03284	482-A Industrial Hygiene [31]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work Lecture or panel	2/56	Specially arranged	66
18 P 03286	489-A Chemical Methods in Industrial Hygiene [98]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work	2/56	Specially arranged	81
18 P 03288	4811-A Special Topics in Industrial Hygiene Laboratory Methods	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work Small group discussion	Unknown	Specially arranged	Unknown
18 P 03141	Course for General Practitioner	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	32	Laboratory work Clinical case work	Arranged	Specially arranged	100
18 P 03600	Seminar in Industrial Health [5, 77]	N. C. Memorial Hospital Chapel Hill, N. C.	R	B	12	Lecture or panel	2/ 9/56	C; 2 days	10
18 P 03681	Seminars in Industrial Medicine [52]	Institute of Industrial Health, College of Medicine, University of Cincinnati Cincinnati	S	B	50	Clinical case work Lecture or panel	9/10/55	I; 1 hr. twice weekly for 8 mo. Fridays, Saturdays	Unknown
18 P 03680	Occupational Skin Problem [11]	Institute of Industrial Health, College of Medicine, University of Cincinnati Cincinnati	S	B	35	Clinical case work Lecture or panel	10/10/55	C; 1 wk.	75
18 P 03682	The Lead Problem in Industry [41]	Institute of Industrial Health, College of Medicine, University of Cincinnati Cincinnati	S	B	30	Lecture or panel	11/ 7/55	C; 5 days	75
18 P 03971	Occupational Medicine [102]	Graduate School of Public Health, University of Pittsburgh Pittsburgh 13	R	S	220	Laboratory work Lecture or panel	11/21/55	C; 10 wk.	200
18 P 03995	Seminar on Industrial Medicine	Medical College of South Carolina 16 Lucas St., Charleston, S. C.	S	B	7	Lecture or panel	Unknown	C; 1 day	Nil

19. INFECTIOUS DISEASE

19 P 03516	Infectious Diseases [5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	7	Clinical case work Small group discussion	12/ 1/55	C; 1 day	15

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		20. INTERNAL MEDICINE							
20 P 01204	Evening Lectures in Medicine, Part 1 and Part 2 [99, 84]	Mills Memorial Hospital San Mateo, Calif.	R	B	24	Lecture or panel	9/22/55	I; 2 hr. weekly for 12 wk. Thursdays	To be announced
20 P 01203	Postgraduate Institute [84, 5]	Herrick Memorial Hospital *2001 Dwight Way, Berkeley, Calif.*	R	B	12	Lecture or panel *Small group discussion*	9/28/55	I; 2 hr. weekly for 6 wk. Wednesdays	To be announced
20 P 01222	855: Intensive Review of Internal Medicine	University of Southern California School of Medicine Medical Research Building, 2025 Zonal Ave., Los Angeles 33	R	B	40	Lecture or panel	9/55	C; 2 wk.	50
20 P 01079	General Management of Diabetes Mellitus [64, 14]	Los Angeles County General Hospital 1200 N. State St., Los Angeles 33	R	G	27½	Small group discussion	10/ 6/55	I; 2½ hr. weekly for 11 wk. Thursdays	60
20 P 04555	Recent Advances in Internal Medicine [5, 100]	Letterman Army Hospital San Francisco	R	B	40	Clinical case work Lecture or panel	10/31/55	C; 5 days	Nil
20 P 01094	Differential Diagnosis of Internal Diseases [65, 14]	Los Angeles County Hospital 1200 N. State St., Los Angeles 33	R	B	18	Small group discussion	1/ 3/56	I; 1½ hr. weekly for 12 wk. Tuesdays	50
20 P 01266	Management of Diabetes	University of Colorado School of Medicine 4200 E. 9th Ave., Denver 20	R	B	20	Clinical case work Small group discussion	5/24/56	C; 3 days	30
20 P 01260	Fundamental Advances in Internal Medicine	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	R	B	40	Lecture or panel	6/56	C; 5 days	60
20 P 01372	Seminar on Diabetes [5, 180, 383]	Princess Issena Hotel Daytona Beach, Fla.	R	B	10	Lecture or panel	10/20/55	C; 2 days	10
20 P 01714	Electrocardiography and Heart Disease [58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	70	Clinical case work Laboratory work	9/14/55	I; 7 hr. weekly for 10 wk. Wednesdays	150
20 P 01602	One Week Advanced Course in Electrocardiography [5, 198]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	40	Laboratory work Clinical case work	9/19/55	C; 1 wk.	150
20 P 01611	Liver and Biliary Tract Diseases [5, 92]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Laboratory work Clinical case work	9/19/55	C; 1 wk.	100
20 P 01712	Clinical Medicine at the Bedside [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work *Small group discussion*	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
20 P 01719	Differential Diagnosis [58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
20 P 01724	General Medicine [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work Small group discussion	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
20 P 01722	Arthritis and Allied Rheumatic Diseases	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	9/23/55	I; 2 hr. weekly for 10 wk. Fridays	100
20 P 01595	Course 2—Internal Medicine [5, 173]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	80	Clinical case work Small group discussion	9/26/55	C; 2 wk.	125
20 P 01599	Electrocardiography and Heart Disease [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	76	Laboratory work Clinical case work	10/10/55	C; 2 wk.	150
20 P 01715	Electrocardiography and Heart Disease [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	70	Laboratory work Clinical case work	2/ 8/56	I; 7 hr. weekly for 10 wk. Wednesdays	150
20 P 01600	Electrocardiography and Heart Disease [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	76	Laboratory work Clinical case work	3/12/56	C; 2 wk.	150
20 P 01713	Clinical Medicine at the Bedside [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work Small group discussion	3/21/56	I; 2 hr. weekly for 10 wk. Wednesdays	100
20 P 01725	General Medicine [58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work Small group discussion	3/21/56	I; 2 hr. weekly for 10 wk. Wednesdays	100
20 P 01723	Arthritis and Allied Rheumatic Diseases [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	3/23/56	I; 2 hr. weekly for 10 wk. Fridays	100

20 P 01596	Course II—Internal Medicine [5, 173]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	80	Clinical case work Small group discussion	4/30/56	C; 2 wk.	125
20 P 01612	Liver and Biliary Tract Diseases [5, 92]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Laboratory work Clinical case work	6/18/56	C; 1 wk.	100
20 P 01601	Electrocardiography and Heart Disease [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	76	Laboratory work Clinical case work	7/ 9/56	C; 2 wk.	150
20 P 01852	Treatment of Diabetes [808]	State University of Iowa College of Medicine Iowa City	R	B	6	Lecture or panel	12/ 8/55	C; 1 day	10
20 P 03820	Recent Developments in Psychiatry for the Internist [240, 53, 5, 241]	The Menninger Foundation Topeka, Kan.	S	S	40	Lecture or panel	10/31/55	C; 5 days	30 to members
20 P 01863	Internal Medicine [40]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	R	B	21	Clinical case work Lecture or panel	11/14/55	C; 4 days	50
20 P 01916	Fluid and Electrolyte Balance [101]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	S	B	40	Laboratory work Clinical case work	1/16/56	C; 5 days	50
20 P 02019	Internal Medicine 2 [310, 106]	Boston City Hospital 818 Harrison Ave., Boston	S	B	400	Laboratory work Clinical case work	9/ 1/55	C; 13 wk.	400
20 P 02126	Review of Recent Advances in Internal Medicine [210, 96]	New England Center Hospital 171 Harrison Ave., Boston	R	B	36	Clinical case work Lecture or panel	10/ 3/55	C; 1 wk.	50
20 P 02013	Diabetes and Endocrinology in Relation to General Medicine [310, 312]	New England Deaconess Hospital 16 Deaconess Rd., Boston	R	B	21	Clinical case work Small group discussion	10/10/55	C; 3 days	30
20 P 02010	Cardiology 2 [57, 310]	Boston City Hospital 818 Harrison Ave., Boston	R	B	36	Clinical case work Lecture or panel	11/ 2/55	I; 3 hr. weekly for 12 wk. Wednesdays	75
20 P 02020	Internal Medicine 2 [310, 106]	Boston City Hospital 818 Harrison Ave., Boston	S	B	400	Laboratory work Clinical case work	6/ 4/56	C; 13 wk.	400
20 P 02005	Neurological Medicine for Physicians [51, 310]	Boston City Hospital 818 Harrison Ave., Boston	S	S	35	Clinical case work Lecture or panel	6/18/56	C; 1 wk.	150
20 P 02011	Internal Medicine 3 [11, 310]	Massachusetts General Hospital Fruit Street, Boston	R	B	180	Small group discussion Lecture or panel	6/18/56	C; 6 wk.	250
20 P 02012	Clinical Heart Disease [310, 311]	Peter Bent Brigham Hospital 721 Huntington Ave., Boston	R	B	120	Laboratory work Clinical case work	7/ 2/56	C; 4 wk.	200
20 P 02222	Electrocardiography	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	33	Lecture or panel	9/55	I; 1 hr. weekly for 33 wk.	45
20 P 02159	Clinical Internal Medicine [214]	Department of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	G	84	Unknown	10/ 6/55	I; 3½ hr. weekly for 21 wk. Thursdays	65
20 P 03821	Recent Advances in Internal Medicine [240, 243, 5, 241]	University of Michigan Medical School Ann Arbor, Mich.	S	S	44	Lecture or panel	10/17/55	C; 5½ days	30 to members
20 P 02165	Diseases of the Heart [57]	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	B	36	Lecture or panel	3/56	C; 5 days	50
20 P 02224	Gastroenterology Clinic [102]	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
20 P 02225	Medical X-Ray Conference	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
20 P 02226	Therapeutic Conference	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
20 P 02234	Medical Seminar	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
20 P 02235	Medical Pathological Conference	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
20 P 02236	Hematology Clinic	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	22	Lecture or panel	Unknown	I; 2 hr. weekly for 11 wk.	15
20 P 02237	Review of Clinical Hematology	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
20 P 02314	Internal Medicine for Internists [33, 5]	University of Minnesota Center for Continuation Study Minneapolis	R	S	10	Lecture or panel	2/13/56	C; 3 days	25
20 P 02166	Chronic Diseases [225, 5]	St. Michael's Hospital 306 High St., Newark, N. J.	R	G	14	Lecture or panel Demonstration	10/12/55	I; 2 hr. monthly for 7 mo. Wednesdays	25

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 5, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		20. INTERNAL MEDICINE—Continued							
20 P 03310	5420-A Normal and Pathological Physiology: Functional and Chemical Aspects [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	70	Lecture or panel	9/ 6/55	C; 10 days	100
20 P 02648	Medicine PM 66—Clinical Hematology [51]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	57	Clinical case work Lecture or panel	9/13/55	I; 3 hr. weekly for 19 wk. Tuesdays	75
20 P 02651	Medicine PM 67—Advanced Hematology [102]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	47½	Clinical case work Lecture or panel	9/13/55	I; 2½ hr. weekly for 19 wk. Tuesdays	75
20 P 02654	Medicine PM 70—Gastroenterology	Montefiore Hospital East Gun Hill Road, New York 67	R	G	56	Clinical case work Lecture or panel	9/13/55	I; 3½ hr. weekly for 16 wk. Tuesdays	75
20 P 02656	Medicine PM 72—Neoplastic Diseases [31]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	80	Clinical case work Lecture or panel	9/13/55	I; 4 hr. weekly for 20 wk. Tuesdays	150
20 P 02653	Medicine PM 68—Allergy [102]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	26	Clinical case work Lecture or panel	9/15/55	I; 2 hr. weekly for 13 wk. Thursdays	50
20 P 02644	Medicine PM 63—Cardiology 3 Section A	Montefiore Hospital East Gun Hill Road, New York 67	R	G	63	Clinical case work Lecture or panel	9/20/55	I; 3½ hr. weekly for 19 wk. Tuesdays	150
20 P 02647	Medicine PM 64—Recent Advances in Surgical Treatment of Heart Diseases	Montefiore Hospital East Gun Hill Road, New York 67	R	G	63	Clinical case work Lecture or panel	9/20/55	I; 3½ hr. weekly for 18 wk. Tuesdays	150
20 P 02642	Medicine PM 62—Cardiology 2—Section A	Montefiore Hospital East Gun Hill Road, New York 67	R	G	45½	Clinical case work Lecture or panel	9/22/55	I; 3½ hr. weekly for 13 wk. Thursdays	150
20 P 02640	Medicine PM 60—Cardiology 1—Section A	Montefiore Hospital East Gun Hill Road, New York 67	R	G	78	Clinical case work Lecture or panel	9/22/55	I; 6 hr. weekly for 13 wk. Thursdays	150
20 P 02646	Medicine PM 65—Peripheral Vascular Diseases [103]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	81	Clinical case work Lecture or panel	9/22/55	I; 3 hr. weekly for 27 wk. Thursdays	125
20 P 03323	5433-A Tutorial Course in Internal Medicine [8, 104, 105]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	Unknown	Laboratory work Clinical case work	9/55	C; 4 to 6 mo.	100
20 P 02659	Medicine PM 80—Diseases of the Chest [106, 107]	Bellevue Hospital East 26th Street, New York 32	R	G	160	Clinical case work	10/ 3/55	C; 4 wk.	125
20 P 02650	Medicine PM 65-A—Advanced Course in Peripheral Vascular Surgery [103]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	54	Clinical case work Lecture or panel	10/ 5/55	I; 3 hr. weekly for 18 wk. Wednesdays	150
20 P 02633	Medicine PM 41—Elementary Electrocardiography	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	30	Clinical case work Lecture or panel	10/24/55	C; 1 wk.	75
20 P 02631	Medicine PM 29—Clinical Cardiology	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	20	Clinical case work	10/25/55	I; 2 hr. weekly for 10 wk. Tuesdays	50
20 P 02634	Medicine PM 42—Advanced Electrocardiography	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	30	Clinical case work Lecture or panel	10/31/55	C; 1 wk.	75
20 P 03549	Recent Advances in Internal Medicine [8]	Kings County Hospital Brooklyn, N. Y.	R	G	15	Clinical case work Lecture or panel	10/55	I; 1½ hr. weekly for 10 wk. Wednesdays	30
20 P 02637	Medicine PM 43—Spatial Vectorcardiography	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	28	Clinical case work Lecture or panel	11/ 7/55	C; 1 wk.	75
20 P 03305	5414-A Arthritis and Allied Rheumatic Disorders [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	35	Clinical case work Lecture or panel	11/ 7/55	C; 1 wk.	75
20 P 03311	5422-A Diabetes Mellitus, Hyperinsulinism and Hypoglycemia [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	21	Lecture or panel	11/14/55	C; 3 days	35
20 P 03322	5432-A Recent Advances in the Diagnosis and Treatment of Poisonings [8]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	21	Laboratory work Lecture or panel	12/ 5/55	C; 3 days	60
20 P 02641	Medicine PM 60—Cardiology 1—Section B	Montefiore Hospital East Gun Hill Road, New York 67	R	G	78	Clinical case work Lecture or panel	1/ 5/56	I; 6 hr. weekly for 13 wk. Thursdays	150
20 P 02643	Medicine PM 62—Cardiology 2—Section B	Montefiore Hospital East Gun Hill Road, New York 67	R	G	45½	Clinical case work Lecture or panel	1/ 5/56	I; 3½ hr. weekly for 13 wk. Thursdays	150
20 P 02655	Medicine PM 71—Diseases of the Chest [108]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	53½	Clinical case work Lecture or panel	1/ 6/56	I; 2½ hr. weekly for 21 wk. Fridays	100
20 P 02635	Medicine PM 41—Elementary Electrocardiography	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	30	Clinical case work Lecture or panel	1/16/56	C; 1 wk.	75

20 P 02658	Medicine PM 73—Advanced Gastroenterology [102]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	59½	Clinical case work Lecture or panel	1/17/56	I; 3¼ hr. weekly for 17 wk. Tuesdays	75
20 P 03517	Arthritis [5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	7	Clinical case work Small group discussion	1/19/56	C; 1 day	15
20 P 02636	Medicine PM 42—Advanced Electrocardiography	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	30	Clinical case work Lecture or panel	1/23/56	C; 1 wk.	75
20 P 02632	Medicine PM 31—Cardiovascular Diseases	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	70	Clinical case work Lecture or panel	1/30/56	C; 2 wk.	150
20 P 02701	Medicine PM 61—Recent Advances in Surgical Treatment of Heart Diseases	Montefiore Hospital East Gun Hill Road, New York 67	R	G	63	Clinical case work Lecture or panel	1/31/56	I; 3½ hr. weekly for 18 wk. Tuesdays	150
20 P 02615	Medicine PM 63—Cardiology 3—Section B	Montefiore Hospital East Gun Hill Road, New York 67	R	G	63	Clinical case work Lecture or panel	1/31/56	I; 3⅓ hr. weekly for 19 wk. Tuesdays	150
20 P 02649	Medicine PM 66—Clinical Hematology [51]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	57	Clinical case work Lecture or panel	1/31/56	I; 3 hr. weekly for 19 wk. Tuesdays	75
20 P 02652	Medicine PM 67—Advanced Hematology [102]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	47½	Clinical case work Lecture or panel	1/31/56	I; 2½ hr. weekly for 19 wk. Tuesdays	75
20 P 02657	Medicine PM 72—Neoplastic Diseases [31]	Montefiore Hospital East Gun Hill Road, New York 67	R	G	80	Clinical case work Lecture or panel	1/31/56	I; 4 hr. weekly for 20 wk. Tuesdays	150
20 P 02660	Medicine PM 80—Diseases of the Chest [106, 107]	Bellevue Hospital East 26th Street, New York 32	R	G	160	Clinical case work Lecture or panel	2/14/56	C; 4 wk.	125
20 P 03324	5134-A Arthritis and Related Disorders [109]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Demonstration	2/ 1/56	I; 7 hr. weekly for 5 wk. Tuesdays	75
20 P 02639	Medicine PM 48—Heart Disease and Circulatory Dynamics	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	18	Clinical case work Lecture or panel	2/14/56	I; 2 hr. weekly for 9 wk. Tuesdays	50
20 P 02661	Medicine PM 81—Arthritis	Hospital for Joint Diseases 1919 Madison Ave., New York	R	G	20	Clinical case work Lecture or panel	3/ 5/56	I; 2 hr. weekly for 10 wk. Mondays	100
20 P 03291	511-A Seminar in Internal Medicine [9]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	280	Lecture or panel Demonstration	4/ 9/56	C; 8 wk.	250
20 P 03303	5112-A Nephritis and Hypertension [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	21	Lecture or panel Demonstration	4/ 9/56	I; 3 hr. weekly for 8 wk. Mondays	30
20 P 03292	542-A Arthritis and Allied Rheumatic Disorders [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	24	Lecture or panel Demonstration	4/10/56	I; 3 hr. weekly for 8 wk. Tuesdays	50
20 P 03296	545-A Normal and Pathological Physiology: Functional and Chemical Aspects [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	16	Lecture or panel Demonstration	4/11/56	I; 2 hr. weekly for 8 wk. Wednesdays	40
20 P 03301	5410-A Diseases of the Liver and Biliary Tract [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	16	Lecture or panel Demonstration	4/11/56	I; 2 hr. weekly for 8 wk. Wednesdays	35
20 P 03298	547-A Problems in Diagnosis [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	12	Clinical case work Demonstration	4/13/56	I; 1¾ hr. weekly for 7 wk. Fridays	35
20 P 03309	5419-A Symposium on Modern Therapeutics in Internal Medicine [9]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	70	Lecture or panel Demonstration	6/11/56	C; 10 days	90
20 P 02953	Internal Medicine DM1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Clinical case work Demonstration	Anytime	Specially arranged	300
20 P 03828	Physiological Basis of Internal Medicine [240, 53, 5, 241]	Duke University School of Medicine Durham, N. C.	S	S	40	Lecture or panel	10/14/55	C; 5 days	30 to members
20 P 04135	Internal Medicine [288, 289]	The University of Texas, Southwestern Medical School 5323 Harry Hines Blvd., Dallas, Texas	R	S	Unknown	Unknown	12/55	C; 2 days	Unknown
20 P 02489	Diabetes and Basic Metabolic Problems [244, 245, 246]	Dallas, Texas	S	B	20	Lecture or panel	1/25/56	C; 3 days	40 to members
20 P 04191	Hypertension and Complications [40, 200]	The University of Texas Postgraduate School of Medicine, Corpus Christi Division Corpus Christi, Texas	R	R	6	Lecture or panel	2/56	C; 1 day	10
20 P 01290	Contemporary Developments in Internal Medicine [140]	University of Washington School of Medicine Health Sciences Building, Seattle	R	S	30	Clinical case work Small group discussion	11/14/55	C; 5 days	50

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
	20. INTERNAL MEDICINE—Continued								
20 P 03820	Neuropsychiatric Aspects of Internal Medicine[240, 5, 241]	University of Wisconsin Medical School Madison, Wis.	S	S	40	Lecture or panel	10/14/55	C; 5 days	30 to members
20 P 04367	Observation Course in Internal Medicine	University of Wisconsin Medical School 418 N. Randall Ave., Madison, Wis.	R	S	Variable	Clinical case work	Anytime	C; 4 wk.	100
	21. MALIGNANT DISEASE								
21 P 02481	Cancer Conference	American Cancer Society, California Division 467 O'Farrell St., San Francisco 2	S	S	4	Lecture	9/30/55	C; 4 hrs.	Nil
21 P 02486	Ninth Annual Connecticut Cancer Conference for Physicians[247, 62, 248]	Ballroom, Hotel Taft 81 College St., New Haven, Conn.	R	G	5	Lecture or panel	3/56	C; 5 hr.	Nil
21 P 01277	Cancer Teaching Day[110]	New Haven, Conn.	S	B	6	Small group discussion Lecture or panel	3/56	C; 1 day	Nil
21 P 01363	Physicians' Postgraduate Courses in Cancer Cytology[5, 16, 208]	The Cancer Institute at Miami 1155 N. W. 14th St., Miami, Fla.	S	B	Variable	Laboratory work Lecture or panel	Any time	Specially arranged	450 for 1 yr.
21 P 01493	Malignant Bone Tumors—Symptomatology, Diagnosis, Treatment, and Prognosis	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
21 P 01804	Symposium on Malignancy (Neurogenic Carcinoma)	Indiana University School of Medicine 1100 W. Michigan St., Indianapolis	R	B	12	Lecture or panel	3/27/56	C; 2 days	Nil
21 P 02315	Cancer Detection for General Physicians[83, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	2/16/56	C; 3 days	25
21 P 02850	Med PM 72—Neoplastic Diseases[31]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	80	Laboratory work Clinical case work Lecture or panel	9/13/55	I; 4 hr. weekly for 20 wk. Tuesdays	150
21 P 04500	Office Procedures for Cancer Detection	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	S	B	17½	Clinical case work Demonstration	11/ 8/55	I; 3½ hr. weekly for 5 wk. Tuesdays	25
21 P 02625	Cancer PM 1—Cancer Diagnosis and Treatment[112]	Columbia Presbyterian Medical Center 630 W. 168th St., New York 32	R	G	38	Small group discussion	11/14/55	C; 1 wk.	100
21 P 04503	Office Procedure for Cancer Detection	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	S	B	17½	Clinical case work Demonstration	1/ 3/56	I; 3½ hr. weekly for 5 wk. Tuesdays	25
21 P 01335	Med PM 72—Neoplastic Diseases[31]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	80	Laboratory work Clinical case work Lecture or panel	1/31/56	I; 4 hr. weekly for 20 wk. Tuesdays	150
21 P 04504	Office Procedures for Cancer Detection	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	S	B	17½	Clinical case work Demonstration	2/28/56	I; 3½ hr. weekly for 5 wk. Tuesdays	25
21 P 03811	Diagnosis and Treatment of Malignant Neoplasms[53, 208]	University of Oregon Medical School 3181 S. W. Sam Jackson Park Rd., Portland, Ore.	R	B	35	Clinical case work Small group discussion	9/12/55	C; 5 days	25
21 P 04189	Malignancies[228, 206]	The University of Texas Postgraduate School of Medicine, San Antonio Division, Robert B. Green Hospital San Antonio, Texas	R	B	8	Small group discussion	3/ 7/56	I; 2 hr. weekly for 4 wk. Wednesdays	15
	22. MICROBIOLOGY								
22 P 01020	Laboratory Diagnosis of Virus and Rickettsial Diseases (8.20)[28, 111]	Communicable Disease Center, U. S. Public Health Service, Virus and Rickettsia Laboratories Montgomery, Ala.	S	S	80	Laboratory work Lecture or panel	10/17/55	C; 2 wk.	Nil
22 P 01405	Laboratory Diagnosis of Viral and Rickettsial Diseases (8.20)[16, 112, 113]	Communicable Disease Center, U. S. Public Health Service, Virus and Rickettsia Laboratories Montgomery, Ala.	S	B	80	Laboratory work Small group discussion	10/17/55	C; 2 wk.	Nil
22 P 01407	Laboratory Diagnosis of Rabies (8.26)[51, 113]	Communicable Disease Center, U. S. Public Health Service, Virus and Rickettsia Laboratories Montgomery, Ala.	S	G	40	Laboratory work Small group discussion	10/31/55	C; 5 days	Nil
22 P 01021	Laboratory Diagnosis of Virus and Rickettsial Diseases (8.20)[28, 111]	Communicable Disease Center, U. S. Public Health Service, Virus and Rickettsia Laboratories Montgomery, Ala.	S	S	80	Laboratory work Lecture or panel	3/12/56	C; 2 wk.	Nil

22 P 01406	Laboratory Diagnosis of Viral and Rickettsial Diseases (8.20) [16, 112, 113]	Communicable Disease Center, U. S. Public Health Service, Virus and Rickettsia Laboratories Montgomery, Ala.	S	B	80	Laboratory work Small group discussion	3/12/56	C; 2 wk.	Nil
22 P 01407	Laboratory Diagnosis of Rabies (8.26) [51, 113]	Communicable Disease Center, U. S. Public Health Service, Virus and Rickettsia Laboratories Montgomery, Ala.	S	G	40	Laboratory work Small group discussion	3/26/56	C; 5 days	Nil
22 P 01022	Virus Isolation and Identification Technics (8.21) [92, 111]	Communicable Disease Center, U. S. Public Health Service, Virus and Rickettsia Laboratories Montgomery, Ala.	S	S	Varies	Laboratory work	Anytime	Specially arranged	Unknown
22 P 01291	Microbiology 210—Diagnostic Medical Mycology	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	40	Laboratory work Small group discussion	Arranged	C; 5 wk.	100
22 P 01396	Laboratory Diagnosis of Parasitic Diseases, Part 1, Intestinal Parasites (8.00) [16, 51]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	160	Laboratory work Small group discussion	9/12/55	C; 4 wk.	Nil
22 P 01398	Laboratory Diagnosis of Bacterial Diseases, Part 1, General Bacteriology (8.40) [16, 51]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	80	Laboratory work Small group discussion	9/12/55	C; 2 wk.	Nil
22 P 01399	Laboratory Diagnosis of Bacterial Diseases, Part 2, General Bacteriology (8.41) [16, 51]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	80	Laboratory work Small group discussion	9/26/55	C; 2 wk.	Nil
22 P 01397	Laboratory Diagnosis of Parasitic Diseases, Part 2, Blood Parasites (8.01) [16, 51]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	120	Laboratory work Small group discussion	10/10/55	C; 3 wk.	Nil
22 P 01400	Laboratory Diagnosis of Bacterial Diseases, Enteric Bacteriology (8.50) [16, 114]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	80	Laboratory work Small group discussion	10/17/55	C; 2 wk.	Nil
22 P 01401	Laboratory Methods in Medical Mycology, Part 1, Cutaneous Pathogenic (8.15) [16, 114]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	80	Laboratory work Small group discussion	10/31/55	C; 2 wk.	Nil
22 P 01402	Laboratory Methods in Medical Mycology, Part 2, Subcutaneous and Systemic Fungi (8.16) [16, 114]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	80	Laboratory work Small group discussion	11/14/55	C; 2 wk.	Nil
22 P 01403	Laboratory Diagnosis of Tuberculosis (8.55) [16, 114]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	80	Laboratory work Small group discussion	11/14/55	C; 2 wk.	Nil
22 P 01393	Laboratory Methods in the Study of Pulmonary Mycoses (8.17) [16, 114]	Communicable Disease Center, U. S. Public Health Service P. O. Box 185, Chamblee, Ga.	S	B	80	Laboratory work Small group discussion	11/28/55	C; 10 days	Nil
22 P 02214	Microbiology Seminar	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	11	Small group discussion	Unknown	I; 1 hr. weekly for 11 wk.	15
22 P 02211	Parasitology and Medical Entomology [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	66	Laboratory work Small group discussion	Unknown	I; 3 hr. weekly for 11 wk.	50
22 P 02919	Bacteriology DB1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Laboratory work Small group discussion	Anytime	C; 6 wk.	100
22 P 04195	Laboratory and X-Ray Diagnosis [206]	The University of Texas Postgraduate School of Medicine, State Medical Association Library Building, Austin, Texas	R	G	16	Lecture or panel	10/17/55	I; 2 hr. weekly for 8 wk. Mondays	25

23. NEUROLOGY

23 P 01609	Clinical Neurology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Clinical case work Small group discussion	9/21/55	I; 3 hr. weekly for 10 wk. Wednesdays	100
23 P 01610	Clinical Neurology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Clinical case work Small group discussion	3/21/56	I; 3 hr. weekly for 10 wk. Wednesdays	100
23 P 01829	Neurology Postgraduate Course [305]	State University of Iowa College of Medicine Iowa City	R	B	6	Lecture or panel Demonstration	4/11/56	C; 1 day	10
23 P 02087	Postgraduate Seminar in Neurology and Psychiatry [127]	Metropolitan State Hospital 475 Trapelo Rd., Waltham, Mass.	S	B	74	Laboratory work Lecture or panel	10/ 7/55	I; 3 hr. twice weekly for 20 wk. Fridays, Saturdays	Nil
23 P 02313	Neurology [33, 5]	University of Minesota Center for Continuation Study Minneapolis 14	R	B	32	Lecture or panel	2/ 6/56	C; 1 wk.	40

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		23. NEUROLOGY—Continued							
23 P 02553	Neurology PM 61—Advanced Neurology [115]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	420	Laboratory work Clinical case work Operative surgery	9/55	C; 13 wk.	150
23 P 03380	644-A Neuroanatomy and Neurophysiology [57]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	126	Laboratory work Lecture or panel	9/12/55	I; 3½ hr. 3 days weekly by arrangement	250
23 P 02685	Neurology PM 62—Review of Neurology [58]	Montefiore Hospital East Gun Hill Road, New York 67	S	S	78	Laboratory work Clinical case work	9/14/55	I; 2 hr. 3 times weekly for 13 wk. Tuesdays, Wednesdays Sundays	150
23 P 03381	647-A Psychiatry and Neurology	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	420	Clinical case work Lecture or panel	9/19/55	C; 12 wk.	300
23 P 01272	Clinical Neurology [116]	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	34½	Lecture or panel	9/26/55	I; 2½ hr. weekly for 11 wk. Mondays	Nil
23 P 02682	Neurology PM 33—Clinical Electroencephalography	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	45	Laboratory work	9/29/55	I; 3 hr. weekly for 15 wk. Thursdays	100
23 P 02663	Neurology PM 31—Neuropathology	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	20	Laboratory work	9/30/55	I; 2 hr. weekly for 10 wk. Fridays	75
23 P 03513	Neurology [5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	7	Clinical case work Small group discussion	10/27/55	C; 1 day	15
23 P 02662	Neurology PM 30—Clinical Neurology	Mt. Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	30	Clinical case work Lecture or panel	4/ 2/56	C; 1 wk.	75
23 P 03379	642-A Electroencephalography [106]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	160	Laboratory work	Arranged	I; 4 hr. daily for 8 wk. Mondays, Fridays	300
23 P 02683	Neurology PM 34—Laboratory Training in Clinical Electroencephalography	Mount Sinai Hospital Fifth Avenue and 100th Street New York	S	S	500	Laboratory work	Arranged	Specially arranged	300
23 P 02684	Neurology PM 61—Advanced Neurology	Montefiore Hospital East Gun Hill Road, New York 67	S	S	500	Laboratory work Clinical case work	Arranged	Specially arranged	150
23 P 01218	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	10/ 1/55	C; 3 wk.	200
23 P 01496	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	11/ 1/55	C; 3 wk.	200
23 P 01497	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	12/ 1/55	C; 3 wk.	200
23 P 01498	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	1/ 1/56	C; 3 wk.	200
23 P 01499	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	2/ 1/56	C; 3 wk.	200
23 P 01500	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	3/ 1/56	C; 3 wk.	200
23 P 01501	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	4/ 1/56	C; 3 wk.	200
23 P 03882	Pain Syndromes: Diagnosis and Treatment by Regional Block [13]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	3	Clinical case work Lecture or panel	5/ 1/56	C; 3 wk.	200
23 P 04293	The Management of Acute Paralytic Respiratory Failure	University of Washington School of Medicine	R	B	9	Clinical case work Small group dis-	Summer, 1956	C; 1 day	Unknown

24. NEUROSURGERY

24 P 03327	551-A The Intervertebral Disc [117]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Lecture or panel Demonstration	10/ 3/55	C; 5 days	90
24 P 03329	553-A Acute Neurological Problems of General Practice [118]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	39	Clinical case work Lecture or panel	10/17/55	C; 5½ days	125
24 P 03328	552-A Diagnosis and Treatment of Peripheral Nerve Injuries [117]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	35	Clinical case work Lecture or panel	1/ 9/56	C; 5 days	90
24 P 03330	553-B Acute Neurological Problems of General Practice [118]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	39	Clinical case work Lecture or panel	4/30/56	C; 5½ days	125
24 P 04188	Neuro-Surgery [148, 200]	The University of Texas Post-graduate School of Medicine, San Antonio Division, Robert B. Green Hospital San Antonio, Texas	R	B	4	Small group discussion	1/18/56	I; 2 hr. weekly for 2 wk. Wednesdays	10

26. OBSTETRICS

26 P 01206	Gynecological and Obstetrical Conference	University of California Extension 540 Powell St., San Francisco 22	R	B	12	Lecture or panel	10/20/55	C; 2 days	60
26 P 01387	Tri-State Obstetric Seminar [110]	Daytona Plaza Hotel Daytona Beach, Fla.	R	B	16	Lecture or panel	9/12/55	C; 3 days	Nil
26 P 01141	Los Angeles Obstetrical and Gynecological Forum [186]	Ambassador Hotel 3400 Wilshire Blvd., Los Angeles 57	S	B	11	Lecture or panel	2/11/56	C; 2 days	20
26 P 01142	Obstetrical and Gynecological Assembly of Southern California [186]	Ambassador Hotel 3400 Wilshire Blvd., Los Angeles 57	S	S	23	Lecture or panel	2/13/56	C; 5 days	85
26 P 01352	Obstetrics and Gynecology [320, 5]	George Washington University Hospital 901 23rd St., N. W., Washington 7, D. C.	R	B	30	Lecture or panel	3/12/56	C; 5 days	75
26 P 04619	Office and General Obstetrics [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	10/ 5/55	I; 5 hr. weekly for 4 wk. Wednesdays	100
26 P 01526	Basic Principles and Recent Developments in Obstetrics and Gynecology [327, 58, 5]	Knickerbocker Hotel 163 E. Walton Place, Chicago	R	B	40	Lecture or panel	10/24/55	C; 1 wk.	75
26 P 01492	Obstetrical and Gynecological Surgical Care	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	15	Lecture or panel	10/31/55	I; 3 hr. daily for 5 days	5
26 P 01624	Course I—Obstetrics [5, 200]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	75	Laboratory work Clinical case work	11/ 7/55	C; 2 wk.	150
26 P 04622	Surgical Obstetrics [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	11/23/55	I; 5 hr. weekly for 4 wk. Wednesdays	100
26 P 04623	Surgical Obstetrics [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	1/ 4/56	I; 5 hr. weekly for 4 wk. Wednesdays	100
26 P 04621	Office and General Obstetrics [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	2/ 1/56	I; 5 hr. weekly for 4 wk. Wednesdays	100
26 P 01625	Course I—Obstetrics [5, 200]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	75	Laboratory work Clinical case work	2/27/56	C; 2 wk.	150
26 P 04624	Surgical Obstetrics [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	3/ 7/56	I; 5 hr. weekly for 4 wk. Wednesdays	100
26 P 01626	Course I—Obstetrics [5, 200]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	75	Laboratory work Clinical case work	3/26/56	C; 2 wk.	150
26 P 01627	Course I—Obstetrics [5, 200]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	75	Laboratory work Clinical case work	5/ 7/56	C; 2 wk.	150
26 P 04620	Office and General Obstetrics [5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Laboratory work Clinical case work	5/23/56	I; 5 hr. weekly for 4 wk. Wednesdays	100
26 P 01825	Obstetrics and Gynecology Postgraduate Course [301]	State University of Iowa College of Medicine University Hospital Iowa City	R	B	11	Clinical case work Small group discussion	11/ 4/55	C; 1½ days	15

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicia 1, 1955, to Aug. 31, 1956—Continued

26. OBSTETRICS—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
26 P 02023	Clinical Obstetrics[310, 87]	Boston Lying-in Hospital 221 Longwood Ave., Boston	R	B	120	Clinical case work Small group discussion	10/ 3/55	C; 4 wk.	150
26 P 02024	Clinical Obstetrics[310, 87]	Boston Lying-in Hospital 221 Longwood Ave., Boston	R	B	120	Clinical case work Small group discussion	11/ 1/55	C; 4 wk.	150
26 P 02006	Pathology of Obstetrics and Gynecology[112, 310]	Free Hospital for Women Cumberland Avenue, Brookline, Mass.	S	S	120	Laboratory work Lecture or panel	1/ 5/56	I; 6 hr. weekly for 5 mo. Thursdays	150
26 P 02025	Clinical Obstetrics[310, 87]	Boston Lying-in Hospital 221 Longwood Ave., Boston	R	B	120	Clinical case work Small group discussion	4/ 2/56	C; 4 wk.	150
26 P 02026	Clinical Obstetrics[310, 87]	Boston Lying-in Hospital 221 Longwood Ave., Boston	R	B	120	Clinical case work Small group discussion	5/ 1/56	C; 4 wk.	150
26 P 02310	Obstetrics for General Physicians[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	1/ 5/56	C; 3 days	25
26 P 03131	Obstetrics and Gynecology Including Manikin Obstetrics and Operative Gynecology on the Cadaver	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	400	Laboratory work Clinical case work	10/ 3/55	C; 8 wk.	250
26 P 03340	5610-A X-Ray Diagnosis in Obstetrics and Gynecology[117]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	35	Lecture or panel Demonstration	11/14/55	C; 5 days	75
26 P 03332	561-A Infertility[120]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	21	Laboratory work Lecture or panel	12/ 5/55	C; 3 days	40
26 P 02101	Obstetrics[121]	Dept. of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich.	R	B	24	Lecture or panel Demonstration	1/56	C; 3 days	50
26 P 02686	Obstetrics and Gynecology PM 30—Newer Developments in Obstetrics and Gynecology[118]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	90	Small group discussion Demonstration	3/ 5/56	C; 3 wk.	150
26 P 03518	Obstetrics[5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	14	Clinical case work Small group discussion	3/ 7/56	C; 2 days	30
26 P 03130	Obstetrics and Gynecology Including Manikin Obstetrics and Operative Gynecology on the Cadaver	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	400	Laboratory work Clinical case work	4/ 2/56	C; 8 wk.	250
26 P 03143	Manikin Obstetrics	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	12	Laboratory work Clinical case work	Arranged	Specially arranged	100
26 P 03145	Clinical and Office Obstetrics	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	80	Laboratory work Clinical case work	Arranged	Specially arranged	100
26 P 02661	Obstetrics PM 80—Internship Training	Margaret Hague Maternity Hospital 88 Clifton Place, Jersey City, N. J.	R	G	500	Clinical case work Lecture or panel	Arranged	3 mo. full time specially arranged	350
26 P 02665	Obstetrics PM 81—Observation Course	Margaret Hague Maternity Hospital 88 Clifton Place, Jersey City, N. J.	R	G	160	Clinical case work Lecture or panel	Arranged	1 mo. full time specially arranged	100
26 P 03559	Postgraduate Course in Obstetrics-Pediatrics[227, 207]	The Bowman Gray School of Medicine of Wake Forest College Winston-Salem, N. C.	S	G	15	Clinical case work Lecture or panel	4/15/56	C; 3 days	Nil
26 P 01160	Obstetrics and Gynecology	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	G	18	Lecture or panel	8/55	I; 2 hr. twice weekly for 1 mo. Tuesdays, Fridays	25
26 P 01174	Common Problems in Obstetrics and Pediatrics[206, 207]	The University of Texas Postgraduate School of Medicine, Lubbock Division 2609 19th St., Lubbock, Texas	R	G	10	Lecture or panel	10/12/55	I; 2½ hr. weekly for 4 wk. Wednesdays	15

26 P 04292	Obstetrics and Gynecology	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	15	Lecture or panel Demonstration	Spring, 1956	C; 2 days	20
26 P 01122	Refresher Course for General Practitioners [251]	Vancouver General Hospital Vancouver, British Columbia, Canada	R	G	18	Lecture or panel Theatre clinics	3/26/56	C; 3 days	15

27. OPHTHALMOLOGY

27 P 01207	Ophthalmological Conference [5]	University of California Medical Center, Dept. of Ophthalmology San Francisco 22	S	S	18	Laboratory work Clinical case work	12/ 5/55	C; 3 days	To be announced
27 P 01263	Postgraduate Seminar in Ophthalmology	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	R	S	30	Lecture or panel Demonstration	7/56	C; 4 days	40
27 P 01373	Midwinter Seminar in Ophthalmology and Otolaryngology [5, 384, 383]	Hotel San Souci Miami Beach, Fla.	R	S	30	Lecture or panel	1/16/56	C; 6 days	40
27 P 01768	Extraocular Muscles [122]	Northwestern University Medical School 303 E. Chicago Ave., Chicago 11	S	S	24	Clinical case work Lecture or panel	9/55	C; 2 wk.	100
27 P 01528	Chicago Ophthalmological Society Eighth Clinical Conference [85]	Drake Hotel (probably) Michigan and Walton, Chicago	R	S	20	Lecture or panel	2/56	C; 2 days	35
27 P 04028	Clinical Ophthalmology [5, 108]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Clinical case work Small group discussion	Arranged	C; 2 wk.	80
27 P 01769	Extraocular Muscles [122]	Northwestern University Medical School 303 E. Chicago Ave., Chicago 11	S	S	250	Clinical case work Lecture or panel	Variable	Specially arranged	150
27 P 01875	Ophthalmology and Otolaryngology [123]	University of Kansas Medical Center 39th and Rainbow Blvd. Kansas City 12, Kan.	S	B	30	Clinical case work Lecture or panel	4/ 9/56	C; 5 days	60
27 P 02091	Lancaster Courses in Basic Ophthalmology [134, 5, 16]	Colby College Waterville, Maine	S	B	425	Laboratory work Small group discussion	6/25/56	C; 12 wk.	325.
27 P 02228	Basic Ophthalmology [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	1,400	Laboratory work Lecture or panel	9/55	C; 9 mo.	500
27 P 02172	Ophthalmology [125]	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	S	24	Lecture or panel Demonstration	4/23/56	C; 3 days	50
27 P 02302	Ophthalmology and Otolaryngology for General Physicians [33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	2/27/56	C; 3 days	25
27 P 02389	Pathology of the Eye [126]	Washington University School of Medicine 660 South Kingshighway, St. Louis 10	S	B	40	Small group discussion Lecture or panel	9/12/55	C; 5 days	150
27 P 03351	5711-A Ophthalmoscopy [16]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	15	Lecture or panel Kodachrome slides	9/26/55	I; 3 hr. daily for 1 wk. Monday-Friday	50
27 P 03352	5713-A Ocular Therapeutics [16]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	15	Lecture or panel	9/26/55	I; 3 hr. daily for 1 wk. Monday-Friday	50
27 P 03319	578-A Ocular Expressions of Systemic Disease [94]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	15	Lecture or panel	10/10/55	I; 3 hr. daily for 1 wk. Monday-Friday	50
27 P 03353	5714-A Histopathology [127]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	15	Laboratory work Lecture or panel	10/10/55	I; 3 hr daily for 1 wk. Monday-Friday	100
27 P 02688	Ophthalmology PM 62—Glaucoma [128]	Montefiore Hospital East Gun Hill Road, New York 67	S	S	16	Clinical case work Lecture or panel	10/17/55	I; 2 hr. weekly for 8 wk. Mondays	30
27 P 02856	Ophthalmology PM 62—Glaucoma [129]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	16	Clinical case work Small group discussion Demonstration	10/17/55	I; 2 hr. weekly for 8 wk. Mondays	30
27 P 03310	571-A Surgery of the Eye [130]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	42	Lecture or panel Cadaver	10/24/55	C; 6 days	100
27 P 03318	575-A Differential Diagnosis with the Slit Lamp [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	20	Lecture or panel Demonstration	10/31/55	I; 4 hr. daily for 1 wk. Monday-Friday	75

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Se 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		27. OPHTHALMOLOGY—Continued							
27 P 03502	Review Course in Ophthalmology [45, 5]	State University of New York, Upstate Medical Center 766 Irving Ave., Syracuse, N. Y.	R	S	12	Lecture or panel	11/10/55	C; 2 days	25
27 P 02666	Ophthalmology PM 60—Elementary Ophthalmoscopy	Montefiore Hospital East Gun Hill Road, New York 67	R	G	18	Clinical case work Lecture or panel	1/11/56	I; 2 hr. weekly for 9 wk. Wednesdays	30
27 P 02851	Ophthalmology PM 60—Elementary Ophthalmoscopy [58]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	16	Laboratory work Clinical case work Small group discussion	1/11/56	I; 2 hr. weekly for 8 wk. Wednesdays	30
27 P 03350	579-A Neuro-O ogy [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	15	Lecture or panel	1/16/56	I; 3 hr. daily for 1 wk. Monday-Friday	50
27 P 03343	571-A E s of the	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	42	Lecture or panel Demonstration	3/ 5/56	C; 6 days	90
27 P 03344	alies of the	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	75	Lecture or panel Examination of patients	3/12/56	C; 5 days	75
27 P 03347	f the Eye [130]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	42	Lecture or panel Cadaver	3/19/56	C; 6 days	100
27 P	ogy PM 61—Perimetry	Montefiore Hospital East ll Road, New York 67	S	S	14	Laboratory work Lecture or panel	4/ 2/56	I; 2 hr. weekly for 7 wk. Mondays	30
	nology PM 61—etry [95]	tal ll Road, New York 67	R	B	14	Clinical case work Small group discussion Demonstration	4/ 2/56	I; 2 hr. weekly for 7 wk. Mondays	30
	A Ophthalmic Plas urgery [19]	University Post-Graduate School irst Ave., New York	S	S	15	Lecture or panel Demonstration	4/ 2/56	C; 5 days	75
	External Opht	ish Chronic Disease Hospital Brooklyn, N. Y.	R	G	10	Clinical case work Lecture or panel Demonstration	4/56	I; 2 hr. weekly for 8 wk. Fridays	30
		The New York Eye and Ear Infirmary 218 Second Ave., New York	S	B	24	Small group discussion Lecture or panel	5/16/56	Specially arranged	100
	17	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	16	Clinical case work	Inquire	I; 2 hr. twice weekly for 4 wk. Tuesdays, Fridays	100
	the Eye	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	18	Lecture or panel Demonstration	Inquire	Specially arranged	75
	ptics in Clinical [4 16, 92]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	36	Clinical case work Small group discussion	Inquire	Specially arranged	100
		r Infirmary ork	S	S	16	Clinical case work Small group discussion	Inquire	Specially arranged	75
		and Ear Infirmary e., New York	S	S	20	Clinical case work Operative surgery	Inquire	Specially arranged	150
		ork Eye and Ear Infirmary 8 Second Ave., New York	S	S	16	Clinical case work Small group discussion	Inquire	Specially arranged	100
		The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	16	Clinical case work Small group discussion	Inquire	Specially arranged	75
		New York Eye and Ear Infirmary Second Ave., New York	S	S	16	Clinical case work Small group discussion	Inquire	Specially arranged	75
		ew York Eye and Ear Infirmary 218 Second Ave., New York	S	S	16	Clinical case work Small group discussion	Inquire	Specially arranged	75
							Inquire	Specially arranged	150

27 P 02911	Refraction 68A11 [130]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	18	Clinical case work Small group discussion	Inquire	Specially arranged	100
27 P 02915	Perimetry 68A12 [132]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	16	Clinical case work Small group discussion	Inquire	Specially arranged	75
27 P 03118	Refraction	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	S	B	160	Laboratory work Clinical case work	Arranged	Specially arranged	100
27 P 03121	Operative Ophthalmology (Dissection)	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	S	B	8	Laboratory work Operative surgery	Arranged	Specially arranged	100
27 P 03120	Ophthalmology, Including Cadaver Ophthalmology and Refraction	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	R	B	480	Laboratory work Clinical case work	Arranged	Specially arranged	300
27 P 03122	Motor Anomalies	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	S	B	8	Laboratory work Clinical case work	Arranged	Specially arranged	50
27 P 03126	Clinical Ophthalmology	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	R	B	480	Laboratory work Clinical case work	Arranged	Specially arranged	125
27 P 03131	Clinical Ophthalmology	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	S	B	180	Laboratory work Clinical case work	Arranged	Specially arranged	75
27 P 01167	Ocular Motor Anomalies	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	B	24	Lecture or panel	2/56	C; 3 days	Unknown
27 P 01162	Eye Surgery Refresher Course [153]	University of Toronto Toronto 5, Canada	R	S	24	Operative surgery Small group discussion	3/26/56	C; 2 days	25

28. ORTHOPEDICS

28 P 01090	Traumatic and Minor Orthopedic Surgery [64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	37½	Small group discussion Lecture or panel	10/ 4/55	I; 1½ hr. twice weekly for 12½ wk. Tuesdays, Thursdays	75
28 P 01140	Poliomyelitis [5]	Orthopaedic Hospital 2400 S. Flower St., Los Angeles	R	B	24	Lecture or panel Demonstration	10/55	C; 3 days	15
28 P 01104	Diseases and Injuries of Bones and Joints [87]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	120	Small group discussion Demonstration	7/ 3/56	C; 4 wk.	100
28 P 01139	Poliomyelitis [5]	Orthopaedic Hospital 2400 S. Flower St., Los Angeles	R	B	24	Lecture or panel Demonstration	5/56	C; 3 days	15
28 P 01256	Fractures and Joint Injuries	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	R	G	20	Lecture or panel Demonstration	10/20/55	C; 3 days	30
28 P 01193	Malignant Bone Tumors—Symptomatology, Diagnosis, Treatment, and Prognosis	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
28 P 01178	Instructional Courses in Orthopedic Surgery [279]	Palmer House Chicago	R	S	126	Unknown	1/28/56	C; 4 days	10
28 P 02022	Treatment of Fractures and Other Traumatic Conditions [310, 314]	Massachusetts General Hospital Fruit Street, Boston	R	B	46	Small group discussion Lecture or panel	10/24/55	C; 1 wk.	150
28 P 02000	Poliomyelitis Refresher Course for Physicians [149]	Children's Medical Center 300 Longwood Ave., Boston	R	B	40	Demonstration	6/56	C; 5 days	50
28 P 02001	Poliomyelitis Refresher Course for Physicians [149]	Children's Medical Center 300 Longwood Ave., Boston	R	B	40	Demonstration	8/56	C; 5 days	50
28 P 02037	Orthopedic Surgery 1 [107, 310]	Children's Hospital 300 Longwood Ave., Boston	S	S	Unknown	Clinical case work Small group discussion	Arranged	Specially arranged for 12 mo.	800
28 P 02038	Orthopedic Surgery 2 [107, 310]	Massachusetts General Hospital Fruit Street, Boston	S	S	Unknown	Clinical case work Small group discussion	Arranged	Specially arranged for 12 mo.	800
28 P 02607	Orthopedic Surgery PM 80—Survey of Diseases of Children [293]	Hospital for Joint Diseases 1919 Madison Ave., New York	R	G	66	Clinical case work Lecture or panel	2/16/56	I; 6 hr. weekly for 11 wk. Thursdays	100
28 P 02905	Orthopedics in General Practice DF1026	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Unknown	Anytime	C; 1 wk.	60

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

28. ORTHOPEDICS—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
28 P 02966	Orthopedics of the Foot DF1036	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	Unknown	Laboratory work Small group discussion	Anytime	Specially arranged	100
28 P 03354	582-A Orthopedics in General Practice [19]	New York University Post-Graduate Medical School 550 First Ave., New York	R	G	21	Clinical case work Conferences	Unknown	C; 3 days	50
28 P 03355	583-A Anatomy for Orthopedic Surgeons [120]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Cadaver	Unknown	C; 5 days	90
28 P 03163	Orthopedic Surgery for General Surgeons	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	320	Laboratory work Clinical case work	Arranged	Specially arranged	100
28 P 03164	Operative Orthopedics (Dissection)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	10	Laboratory work Clinical case work	Arranged	Specially arranged	100
28 P 03165	Advanced Orthopedics of the Foot	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	8	Laboratory work Clinical case work	Arranged	Specially arranged	100

29. OTOLARYNGOLOGY

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
29 P 01099	Otolaryngology [120]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	12	Lecture or panel	2/ 7/56	I; 1½ hr. weekly for 8 wk. Tuesdays	30
29 P 01373	Midwinter Seminar in Ophthalmology and Otolaryngology [5, 384, 383]	Hotel San Souci Miami Beach, Fla.	R	S	30	Lecture or panel	1/16/56	C; 6 days	40
29 P 01790	Annual Otolaryngologic Assembly [57]	University of Illinois College of Medicine 1853 W. Polk St., Chicago 12	R	S	76	Laboratory work Operative surgery	9/19/55	C; 2 wk.	175
29 P 01791	Bronchoesophagology [103]	University of Illinois College of Medicine 1853 W. Polk St., Chicago 12	S	S	84	Laboratory work Clinical case work	10/24/55	C; 2 wk.	150
29 P 01767	Endaural Otologic Surgery [5, 9]	Northwestern University Medical School 303 E. Chicago Ave., Chicago 11	S	S	160	Laboratory work Small group discussion	4/56	C; 4 wk.	500
29 P 01770	Audiology [5, 134]	Northwestern University Medical School 303 E. Chicago Ave., Chicago 11	R	S	40	Laboratory work Small group discussion	5/56	C; 1 wk.	100
29 P 01792	Bronchoesophagology [103]	University of Illinois College of Medicine 1853 W. Polk St., Chicago 12	S	S	84	Laboratory work Clinical case work	Spring, 1956	C; 2 wk.	150
29 P 01766	Fellowship Fenestration Surgery [5, 13]	Northwestern University Medical School 303 E. Chicago Ave., Chicago 11	S	S	960	Laboratory work Clinical case work	Anytime	Specially arranged	500
29 P 04627	Clinical Otolaryngology [5, 205]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	50	Clinical case work Small group discussion	Arranged	C; 2 wk.	50
29 P 01870	Hearing and Speech Conference	University of Kansas Medical Center 39th and Rainbow Blvd. Kansas City 12, Kan.	S	S	9	Clinical case work Lecture or panel Demonstration	2/24/56	C; 2 days	3
29 P 01875	Ophthalmology and Otolaryngology [123]	University of Kansas Medical Center 39th and Rainbow Blvd. Kansas City 12, Kan.	S	B	30	Clinical case work Lecture or panel	4/ 9/56	C; 5 days	60
29 P 02171	Otolaryngology [52]	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	S	18	Lecture or panel Demonstration	4/56	C; 3 days	50
29 P 02302	Ophthalmology and Otolaryngology for General Physicians [33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	2/27/56	C; 3 days	25
29 P 02691	Otorhinolaryngology PM 32—Trans-Meatal Surgery	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	72	Laboratory work Clinical case work	9/12/55	I; 4 hr. twice weekly for 9 wk. Mondays, Wednesdays	150
29 P 03359	596-A Anatomy of the Head, Neck, and Thorax for Otolaryngologists [117]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	90	Small group discussion Cadaver	9/26/55	I; 3 hr. daily for 6 wk. Monday-Friday	125

29 P 03116	Otolaryngology and Ophthalmology Including Cadaver EENT and Refraction	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	480	Laboratory work Clinical case work	10/ 3/55	C; 12 wk.	600
29 P 03356	591-A Endaural Surgery [135]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	70	Lecture or panel Demonstration	11/ 7/55	C; 10 days	200
29 P 03300	5910-A Laryngology and Surgery of the Larynx and Neck [135]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	70	Lecture or panel Cadaver dissection	1/ 9/56	C; 10 days	200
29 P 03357	591-B Endaural Surgery [135]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	70	Lecture or panel Demonstration	1/30/56	C; 10 days	200
29 P 03358	595-A Endoscopy; Bronchoesophagology and Laryngology [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	35	Small group discussion Lecture or panel	2/ 6/56	C; 5 days	100
29 P 02692	Otorhinolaryngology PM 33—Combined Course in Laryngoscopy, Voice and Speech Therapy and Audiology	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	B	42	Clinical case work Small group discussion	2/13/56	C; 6 days	150
29 P 03117	Otolaryngology and Ophthalmology, Including Cadaver EENT and Refraction	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	480	Laboratory work Clinical case work	4/ 2/56	C; 12 wk.	600
29 P 02689	Otolaryngology PM 2—Histopathology of the Ear, Nose and Throat	Columbia-Presbyterian Medical Center 630 W. 168th St., New York	S	S	32	Laboratory work	4/10/56	I; 2 hr. twice weekly for 8 wk. Tuesdays, Thursdays	100
29 P 02702	Otorhinolaryngology PM 31—Rhinoplasty and Otoplasty	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	140	Laboratory work Operative surgery	7/14/56	C; 2 wk.	300
29 P 02690	Otorhinolaryngology PM 31—Rhinoplasty and Otoplasty	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	140	Laboratory work Clinical case work	7/16/56	C; 2 wk.	250
29 P 02917	Broncho-Esophagology and Laryngeal Surgery 68B1 [28]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	88	Operative surgery Small group discussion	Inquire	C; 11 days	250
29 P 02918	Allergy of the Eyes and Upper Respiratory Tract 68B2 [87]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	25	Clinical case work	Inquire	C; 2 wk.	150
29 P 02919	Rehabilitation of the Hard of Hearing 68B5 [91]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	32	Lecture or panel Demonstration	Inquire	C; 4 days	75
29 P 02920	The Conservative Management of Acute Sinusitis and Chronic Rhinitis 68B6 [131]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	48	Clinical case work Operative surgery	Inquire	C; 6 days	75
29 P 02922	Clinical Physio-Pathology of the Ear 68B10 [130]	The New York Eye and Ear Infirmary 218 Second Ave., New York	S	S	Unknown	Small group discussion Lecture or panel	Unknown	C; 4 wk.	100
29 P 03124	Operative Nose and Throat Dissection	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	18	Operative surgery Demonstration	Arranged	Specially arranged	150
29 P 03125	Head and Neck Dissection	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	18	Laboratory work Head and neck dissection	Arranged	Specially arranged	150
29 P 03127	Clinical Otolaryngology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	480	Laboratory work Clinical case work	Arranged	Specially arranged	150
29 P 03129	Operative Otology (Cadaver)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	12	Laboratory work Small group discussion	Arranged	Specially arranged	100
29 P 03130	Surgical Anatomy of Nose and Accessory Sinuses	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	18	Laboratory work Clinical case work	Arranged	Specially arranged	150
29 P 03132	Clinical Otolaryngology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	180	Laboratory work Clinical case work	Arranged	Specially arranged	100
29 P 03915	Bronchology, Esophagology and Laryngeal Surgery	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	S	80	Operative surgery Small group discussion	To be announced	C; 2 wk.	250
29 P 03914	Bronchology, Esophagology, and Laryngeal Surgery [101]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	S	80	Operative surgery Small group discussion	To be announced	C; 2 wk.	250
29 P 04252	Gill Memorial Eye, Ear, Nose, and Throat Hospital Annual Spring Congress [137, 5, 138, 139]	Gill Memorial Eye, Ear, Nose, and Throat Hospital 711 S. Jefferson St., Roanoke, Va.	R	S	27	Lecture or panel Demonstration	4/ 2/56	C; 3 days	40

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		30. PATHOLOGY							
30 P 01088	General and Surgical Pathology[64, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	186	Laboratory work Lecture or panel	10/ 4/55	I; 6 hr. weekly for 31 wk. Tuesdays, Thursdays	175
30 P 04557	Forensic Pathology[5, 52]	Armed Forces Institute of Pathology, Walter Reed Army Medical Center Washington 25, D. C.	S	B	40	Lecture or panel Demonstration	11/14/55	C; 5 days	Nil
30 P 04558	Ophthalmic Pathology[5, 27]	Armed Forces Institute of Pathology, Walter Reed Army Medical Center Washington 25, D. C.	S	B	40	Lecture or panel Demonstration	3/19/56	C; 5 days	Nil
30 P 04559	Pathology of the Oral Regions[5, 141]	Armed Forces Institute of Pathology, Walter Reed Army Medical Center Washington 25, D. C.	S	B	40	Lecture or panel	3/26/56	C; 5 days	Nil
30 P 04567	Application of Histochemistry to Pathology[5, 52]	Armed Forces Institute of Pathology, Walter Reed Army Medical Center Washington 25, D. C.	S	B	24	Lecture or panel Demonstration	5/ 7/56	C; 3 days	Nil
30 P 01579	Surgical Pathology[117, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	48	Laboratory work Small group discussion	Arranged	C; 2 wk.	150
30 P 02218	Beginning Hematology[16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	9/55	I; 4 hr. weekly for 11 wk.	50
30 P 02219	Dermatopathology[16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Small group discussion	Unknown	I; 4 hr. weekly for 11 wk.	50
30 P 02245	Cystodiagnosis of Cancer[16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	Unknown	I; 4 hr. weekly for 11 wk.	50
30 P 02232	Bone and Joint Diseases[16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Lecture or panel	Unknown	I; 4 hr. weekly for 11 wk.	50
30 P 02233	Neuropathology[16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	Unknown	I; 4 hr. weekly for 11 wk.	50
30 P 02246	Histopathology of Ear, Nose and Throat[16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Lecture or panel	Unknown	I; 2 hr. weekly for 11 wk.	25
30 P 02231	Advanced Hematology[16, 128]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	Unknown	I; 4 hr. weekly for 11 wk.	50
30 P 02439	Pediatrics[5, 144, 145, 146]	Seton Hall University South Orange, N. J.	S	B	36	Lecture or panel Demonstration	11/55	I; 2 hr. weekly for 18 wk. Wednesdays	25
30 P 03362	442-A Surgical Pathology[147]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	60	Lecture or panel Demonstration	9/20/55	I; 2 hr. twice weekly for 15 wk. Tuesdays, Thursdays	200
30 P 02668	Pathology PM 30—General and Special Pathology[150]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	32	Laboratory work	9/24/55	I; 2 hr. weekly for 16 wk. Saturdays	100
30 P 03363	443-A Principles of Pathology[151]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	72	Lecture or panel Demonstration	9/26/55	I; 3 hr. twice weekly for 12 wk. Mondays	100
30 P 02669	Pathology PM 31—Surgical Pathology[108]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	30	Laboratory work	1/21/56	I; 2 hr. weekly for 15 wk. Saturdays	100
30 P 03361	441-A Gynecological Pathology[147]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	32	Lecture or panel Demonstration	1/24/56	I; 2 hr. twice weekly for 8 wk. Tuesdays, Thursdays	100
30 P 02795	Gynecological and Obstetrical Pathology[7, 152]	State University of New York College of Medicine Brooklyn, N. Y.	S	S	30	Lecture or panel Individual	3/56	I; 3 hr. weekly for 10 wk. Thursdays	100
30 P 02968	Pathology DPA1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	Unknown	Laboratory work Small group discussion	Anytime	Specially arranged	200
30 P 02969	Clinical Pathology DCP1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	26	Laboratory work Small group discussion	Anytime	Specially arranged	100
30 P 03110	Surgical Pathology (A)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	360	Laboratory work Clinical case work	Arranged	Specially arranged	300
30 P 03111	Blood Transfusions (D)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	80	Laboratory work Clinical case work	Arranged	Specially arranged	100

30 P 03112	Urological Pathology (B)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	30	Laboratory work Clinical case work	Arranged	Specially arranged	150
30 P 03113	Gynecological and Obstetrical Pathology (C)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	30	Laboratory work Clinical case work	Arranged	Specially arranged	100
30 P 03114	General Pathology (E)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	2,080	Laboratory work Clinical case work	Arranged	Specially arranged	1,000
30 P 03115	Surgical Pathology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	160	Laboratory work Clinical case work	Arranged	Specially arranged	100
30 P 04171	Clinical Pathological Conference[200]	The University of Texas Postgraduate School of Medicine, San Angelo Division 219 South Magdalen, San Angelo, Texas	R	B	9	Lecture or panel	9/11/55	I; 1 hr. monthly for 9 mo. Sundays	5
30 P 01180	Surgical Pathology and Pathologic Anatomy[13, 200]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	S	88	Laboratory work Small group discussion	Arranged	Specially arranged	25
30 P 01380	Pathology Seminar[380]	Veterans Hospital and Memorial Hospital Cheyenne, Wyo.	R	G	20	Clinical case work Lecture or panel	Arranged	C; 3 wk.	Nil

31. PEDIATRICS

31 P 01219	861: Pediatric Clinics for the General Practitioner[182]	Childrens Hospital of Los Angeles 4614 Sunset Blvd., Los Angeles 27	R	G	20	Demonstration	Unknown	I; 1 hr. weekly for 20 wk. Tuesdays	40
31 P 01265	Pediatrics	University of Colorado School of Medicine 1200 E. Ninth Ave., Denver 20	R	B	24	Small group discussion Lecture or panel	4/56	C; 3 days	30
31 P 01708	The Diagnosis and Treatment of Congenital and Rheumatic Heart Disease in Infants and Children	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	21	Laboratory work Clinical case work	9/21/55	I; 2 hr. weekly for 12 wk. Wednesdays	100
31 P 01721	General Pediatrics[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	S	20	Clinical case work Small group discussion	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
31 P 01676	Roentgenology and Electrocardiography in Heart Disease in Infants and Children	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	15	Clinical case work Laboratory work	10/10/55	C; 3 days	60
31 P 01677	Angiocardiography and Catheterization of Heart and Great Vessels in Diagnosis of Congenital and Acquired Malformations in the Hearts of Infants and Children[5, 202]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	15	Laboratory work Clinical case work	10/13/55	C; 3 days	60
31 P 01525	Basic Principles and Recent Developments in Pediatrics[327, 53, 5]	Knickerbocker Hotel 163 E. Walton Place, Chicago	R	B	40	Lecture or panel	10/17/55	C; 1 wk.	75
31 P 01675	The Diagnosis and Treatment of Congenital and Rheumatic Heart Disease in Infants and Children[5, 202]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Laboratory work Clinical case work	10/17/55	C; 1 wk.	100
31 P 01709	The Diagnosis and Treatment of Congenital and Rheumatic Heart Disease in Infants and Children	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	24	Laboratory work Clinical case work	3/21/56	I; 2 hr. weekly for 12 wk. Wednesdays	100
31 P 01671	Course 5—Pediatrics[5, 108]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	70	Clinical case work Laboratory work	4/ 2/56	C; 2 wk.	100
31 P 01720	General Pediatrics[58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work Small group discussion	3/21/56	I; 2 hr. weekly for 10 wk. Wednesdays	100
31 P 01578	The Neuromuscular Diseases of Children with Special Emphasis on Cerebral Palsy[5, 203]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	80	Laboratory work Clinical case work	6/18/56	C; 2 wk.	225
31 P 01672	Clinical Pediatrics[5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Clinical case work Small group discussion	Arranged	C; 2 wk.	60
31 P 01673	Clinical Pediatrics[5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	120	Clinical case work Small group discussion	Arranged	C; 4 wk.	100

References will be found on pages 1129-1131.

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31. PEDIATRICS—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
31 P 01823	Pediatrics Postgraduate Course [303]	State University of Iowa College of Medicine Iowa City	R	B	10	Clinical case work Small group discussion	9/22/55	C; 1½ days	15
31 P 01872	Pediatrics [40]	University of Kansas Medical Center 39th and Rainbow Blvd. Kansas City 12, Kan.	R	B	21	Clinical case work Lecture or panel	3/12/56	C; 3 days	35
31 P 01914	Pediatric Neurology [153]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	R	S	40	Lecture or panel Demonstration	2/ 6/56	C; 5 days	50
31 P 02015	Pediatrics 1 [310, 15, 5, 16]	Massachusetts General Hospital Fruit Street, Boston	S	S	Unknown	Laboratory work Clinical case work	10/ 3/55	Specially arranged for 34 wk.	800
31 P 02016	Pediatrics 2 [310, 135]	Children's Hospital 300 Longwood Ave., Boston	S	B	Unknown	Laboratory work Clinical case work	10/ 3/55	Specially arranged for 17 wk.	500
31 P 02017	Pediatrics 2 [310, 135]	Children's Hospital 300 Longwood Ave., Boston	S	B	Unknown	Laboratory work Clinical case work	2/ 6/56	Specially arranged for 17 wk.	500
31 P 02008	Pediatrics 3 [207, 310]	Massachusetts General Hospital Fruit Street, Boston	R	B	46	Clinical case work Lecture or panel	6/11/56	C; 8 days	100
31 P 02009	Pediatric Metabolism and Endocrinology [207, 310]	Massachusetts General Hospital Fruit Street, Boston	R	B	17	Clinical case work Lecture or panel	6/20/56	C; 3 days	50
31 P 02018	Pediatrics 2A [310, 128]	Children's Hospital 300 Longwood Ave., Boston	S	B	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged	200 for 3 mo.
31 P 02162	Pediatrics [154]	Dept. of Postgraduate Medicine, University of Michigan Medical School Ann Arbor, Mich.	R	B	24	Lecture or panel Demonstration	1/56	C; 3 days	30
31 P 02331	Pediatrics for Pediatricians [104, 33, 5]	University of Minnesota, Mayo Memorial Auditorium Minneapolis 14	R	S	12	Lecture or panel	9/21/55	C; 2 days	20
31 P 02318	Pediatrics for General Physicians [33, 5]	University of Minnesota Center for Continuation Study Minneapolis	R	G	16	Lecture or panel	3/ 5/56	C; 3 days	25
31 P 02457	Pediatrics for the General Practitioner [223, 5]	St. Michael's Hospital 306 High St., Newark, N. J.	S	G	24	Small group discussion Lecture or panel	2/29/56	I; 4 hr. weekly for 6 wk. Wednesdays	25
31 P 03367	614-A Review of Clinical Pediatrics [48]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	42	Clinical case work Lecture or panel	9/19/55	C; 6 days	50
31 P 03373	6112-A Recent Advances in Tuberculosis in Children: Clinical Observations [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	36	Clinical case work Lecture or panel	9/22/55	I; 3 hr. weekly for 12 wk. Thursdays	60
31 P 02670	Pediatrics PM 31—Pediatric Cardiology [61]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	48	Laboratory work Clinical case work	10/ 5/55	I; 4 hr. weekly for 12 wk. Wednesdays	150
31 P 03364	611-A Clinical Pediatrics [134]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	120	Clinical case work Lecture or panel	10/31/55	I; 4 hr. 3 times weekly for 10 wk. Mondays, Wednesdays, Fridays	125
31 P 02974	Pediatric Allergy DPE1026	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	180	Clinical case work Small group discussion	11/55	Specially arranged	300
31 P 03369	618-A Pediatric Cardiology [134]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Lecture or panel	12/ 5/55	C; 5 days	50
31 P 02474	Pediatric Clinical Seminar	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	6	Small group discussion Lecture or panel	12/ 8/55	C; 1 day	10
31 P 03374	6112-B Recent Advances in Tuberculosis in Children: Clinical Observations [28]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	36	Clinical case work Lecture or panel	1/12/56	I; 3 hr. weekly for 12 wk.	60
31 P 03365	613-A Pediatric Refresher Course [134]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	70	Clinical case work Lecture or panel	1/16/56	C; 2 wk.	100
31 P 03370	6111-A Symposium on Tuberculosis and Other Pulmonary Diseases in Childhood [118]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Lecture or panel Demonstration	1/16/56	C; 5 days	60

31 P 03368	611-B Review of Clinical Pediatrics [48]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	42	Clinical case work Lecture or panel	3/ 5/56	C; 6 days	50
31 P 03371	6111-B Symposium on Tuberculosis and Other Pulmonary Diseases in Childhood [118]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Lecture or panel Demonstration	3/12/56	C; 5 days	60
31 P 01199	Clinical Pediatrics [58]	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	18	Small group discussion Demonstration	3/22/56	I; 3 hr. weekly for 6 wk. Thursdays	25
31 P 03366	613-B Pediatric Refresher Course [134]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	70	Clinical case work Lecture or panel	1/16/56	C; 2 wk.	100
31 P 03372	6111-C Symposium on Tuberculosis and Other Pulmonary Diseases in Childhood [118]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Lecture or panel Demonstration	6/ 4/56	C; 5 days	60
31 P 02899	*Bureau of Child Health Pre-Service Training Course* [233]	*Kips Bay Health Center* 411 E. 69th St., New York	S	B	75	Lecture or panel *Field observation and participation*	Arranged	C; 5 wk.	Nil
31 P 03116	Pediatrics	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	120	Laboratory work Clinical case work	Arranged	Specially arranged	100
31 P 02970	Clinical Pediatrics DPE1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Clinical case work Small group discussion	Anytime	C; 4 wk.	150
31 P 02971	Clinical Pediatrics DPE1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Clinical case work Small group discussion	Anytime	C; 12 wk.	250
31 P 02972	Clinical Pediatrics DPE1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Clinical case work Small group discussion	Anytime	C; 24 wk.	450
31 P 02973	Clinical Pediatrics DPE1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Clinical case work Small group discussion	Anytime	C; 36 wk.	650
31 P 02975	Clinical Pediatrics DPE1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Clinical case work Small group discussion	Anytime	C; 52 wk.	850
31 P 03375	6113-A Comprehensive Course in Tuberculosis and Allied Diseases in Children	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	110	Clinical case work Lecture or panel	Arranged	C; 12 wk.	125
31 P 03559	Postgraduate Course in Obstetrics-Pediatrics [227, 207]	The Bowman Gray School of Medicine of Wake Forest College Winston-Salem, N. C.	S	G	15	Clinical case work	1/15/56	C; 3 days	Nil
31 P 03582	Pediatrics and Internal Medicine [231]	Southern Pediatric Seminar Saluda, N. C.	R	G	80	Clinical case work Lecture or panel	7/11/56	C; 2 wk.	25
31 P 03651	Current Therapy in Pediatric Practice [53]	Frank E. Bunts Educational Institute 2020 E. 93rd St., Cleveland	R	B	10	Lecture or panel	9/28/55	C; 2 days	15
31 P 03801	Symposium on Pediatric Problems [294]	Four selected centers in Western Oregon	R	B	5	Lecture or panel Discussion	11/55	C; 1 day	Nil
31 P 03859	Pediatrics for the General Practitioner [5, 118]	Hahnemann Medical College and Hospital 235 N. 15th St., Philadelphia	R	G	24	Lecture or panel Demonstration	3/16/56	I; 2 hr. weekly for 12 wk. Wednesdays	50
31 P 03892	*Postgraduate Seminar for Pediatricians* [119]	St. Christopher's *Hospital for* Children 2600 N. Lawrence, Philadelphia	R	S	25	Small group discussion Lecture or panel Demonstration	5/56 or 6/56	C; 3½ days	50
31 P 03922	Rh and Other Blood Group Incompatibilities in Relation to Erythroblastosis Fetalis [101, 100]	The Childrens Hospital 1740 Bainbridge St., Philadelphia	R	B	21	Small group discussion Lecture or panel	6/56	C; 3 days	60
31 P 04041	Pediatrics (Circuit-Type) [222, 5, 254]	County seats or major cities in state of Tennessee	R	B	375	Clinical case work Small group discussion	9/ 2/55	Specially arranged	20
31 P 04102	Pediatrics [51, 5]	University of Tennessee Medical College 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	3/11/56	C; 3 days	50
31 P 04171	Common Problems in Obstetrics and Pediatrics [200, 207]	The University of Texas Postgraduate School of Medicine 2609 19th St., Lubbock, Texas	R	G	10	Lecture or panel	10/12/55	I; 2½ hr. weekly for 4 wk. Wednesdays	15
31 P 04132	Pediatrics [207, 5]	The University of Texas, Southwestern Medical School 5323 Harry Hines Blvd., Dallas, Texas	R	G	21	Lecture or panel	11/ 7/55	C; 3 days	30

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
31. PEDIATRICS—Continued									
31 P 04164	Pediatrics	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	B	21	Lecture or panel	11/55	C; 3 days	Unknown
31 P 04181	Pediatrics [13, 206]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	176	Laboratory work Small group discussion	12/55	Specially arranged	25
31 P 04419	Refresher Course for General Practitioners [52]	Vancouver General Hospital Vancouver, British Columbia, Canada	R	G	18	Lecture or panel Theatre clinics	12/ 7/55	C; 3 days	15
32. PERIPHERAL VASCULAR DISEASE									
32 P 01098	Varicose Veins and Surgical Diseases of the Peripheral Vascular System [64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	12	Lecture or panel Demonstration	1/17/56	I; 2 hr. weekly for 6 wk. Tuesdays	30
32 P 01504	Peripheral Vascular and Peripheral Nerve Disease [320]	Hotel Statler Detroit	R	B	8	Lecture or panel Demonstration	8/29/55	C; 2 days	15
32 P 02843	Med PM 65—Peripheral Vascular Diseases [93]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	78	Clinical case work Small group discussion	9/22/55	I; 3 hr. weekly for 26 wk. Thursdays	125
32 P 02844	Med PM 65A—Advanced Course in Peripheral Vascular Surgery [93]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	48	Lecture or panel	10/ 5/55	I; 3 hr. weekly for 16 wk. Wednesdays	150
32 P 03308	5418-A Peripheral Vascular Diseases [134]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	35	Clinical case work Lecture or panel	11/28/55	C; 5 days	50
32 P 02475	Cardiovascular Teaching Day	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	6	Lecture or panel	2/ 2/56	C; 1 day	10
32 P 03304	5413-A Peripheral Vascular Diseases [134]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	16	Lecture or panel Demonstration	4/10/56	I; 2 hr. weekly for 8 wk. Tuesdays	40
32 P 02792	Peripheral Vascular Diseases [7, 8]	Jewish Hospital Brooklyn, N. Y.	R	G	10	Clinical case work Lecture or panel	4/56	I; 1 hr. twice weekly for 5 wk. Mondays, Fridays	20
32 P 03635	The Development of Arterial Grafting for Vascular Disease [262]	Academy of Medicine of Cleveland and Cuyahoga County 2009 Adelbert Rd., Cleveland 6	S	B	3	Lecture or panel	11/18/55	C; 1 day	Nil
33. PHARMACOLOGY									
33 P 02967	Applied Pharmacology DPH1076 [95]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	36	Lecture or panel	Unknown	Specially arranged	300
34. PUBLIC HEALTH									
34 P 02898	Pre-Service Training Course in School Health [234]	Department of Health 125 Worth St., New York 13	S	B	99	Lecture or panel Demonstration	4/13/56	C; 33 days	Nil
34 P 03233	Extension Course in Public Health [272, 273, 5]	New York State Department of Health State Office Building, Albany, N. Y.	S	G	30	Small group discussion Lecture or panel	Inquire	I; 5 hr monthly for 6 mo. Thursdays	25
35. PHYSICAL MEDICINE AND REHABILITATION									
35 P 01091	Physical Medicine [64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	8	Small group discussion	10/ 5/55	I; 1 hr. weekly for 8 wk. Wednesdays	30
35 P 01430	Physical Therapy and Occupational Therapy in the Care of Poliomyelitis [41]	Georgia Warm Springs Foundation Warm Springs, Ga.	R	B	40	Lecture or panel Demonstration	10/ 3/55	C; 5 days	Nil
35 P 01432	Physical Therapy and Occupational Therapy in the Care of Poliomyelitis [5, 10, 112]	Georgia Warm Springs Foundation Warm Springs, Ga.	S	B	515	Clinical case work Lecture or panel	10/ 3/55	C; 6 mo.	Nil
35 P 01431	Physical Therapy and Occupational Therapy in the Care of Poliomyelitis [41]	Georgia Warm Springs Foundation Warm Springs, Ga.	R	B	40	Lecture or panel Demonstration	1/ 2/56	C; 5 days	Nil

35 P 01133	Physical Therapy and Occupational Therapy in the Care of Poliomyelitis [142, 5, 16]	Georgia Warm Springs Foundation Warm Springs, Ga.	S	B	515	Clinical case work Lecture or panel	1/ 2/56	C; 6 mo.	Nil
35 P 01134	Physical Therapy and Occupational Therapy in the Care of Poliomyelitis [142, 5, 16]	Georgia Warm Springs Foundation Warm Springs, Ga.	S	B	515	Clinical case work Lecture or panel	4/ 2/56	C; 6 mo.	Nil
35 P 02096	Physical Therapy and Occupational Therapy in the Care of Poliomyelitis [211, 11]	Georgia Warm Springs Foundation Warm Springs, Ga.	R	B	40	Lecture or panel Demonstration	1/ 2/56	C; 5 days	Nil
35 P 02883	Psychiatric and Vocational Topics of Rehabilitation [320]	Hotel Statler Detroit	R	B	8	Lecture or panel Demonstration	8/30/55	C; 2 days	15
35 P 03509	Physical Medicine and Rehabilitation [5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	S	G	140	Clinical case work Small group discussion	9/28/55	I; 7 hr. weekly for 20 wk. Wednesdays	300
35 P 03377	7312-A Seminar on the Rehabilitation of Children	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	35	Clinical case work	10/17/55	C; 5 days	40
35 P 03376	7311-A Physical Medicine and Rehabilitation [155]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	70	Lecture or panel Demonstration	Unknown	C; 10 days	75
35 P 03148	Physical Medicine and Rehabilitation	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	G	120	Clinical case work Small group discussion	Arranged	Specially arranged	100

36. PHYSIOLOGY

36 P 01092	Surgical Physiology [10, 16]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	64	Lecture or panel	10/ 6/55	I; 2 hr. weekly for 32 wk. Thursdays	75
36 P 01150	Basic Science—Applied Physiology [156]	San Diego County General Hospital and Mercy Hospital San Diego, Calif.	R	B	24	Lecture or panel	11/55	I; 2 hr. weekly for 12 wk. Thursdays	Nil
36 P 01136	Applied Physiology [205]	Mercy Hospital Hillcrest Drive, San Diego, Calif.	S	B	24	Lecture or panel	11/55	I; 2 hr. weekly for 11 wk. Thursdays	Nil
36 P 01603	Clinical Physiology—A Basic Course [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work Small group discussion	9/21/55	I; 2 hr. weekly for 10 wk. Wednesdays	100
36 P 01604	Clinical Physiology—A Basic Course [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	20	Clinical case work Small group discussion	3/21/56	I; 2 hr. weekly for 10 wk. Wednesdays	100
36 P 02216	Physiology and Pharmacology Seminar	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	11	Small group discussion	Unknown	I; 1 hr. weekly for 11 wk.	15
36 P 02217	Survey of Physiology	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	11	Small group discussion	Unknown	I; 1 hr. weekly for 11 wk.	15
36 P 02979	Intensive Review of Physiology DPHY1026 [33]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	25	Small group discussion Lecture or panel	9/55 or 11/55	Specially arranged	50
36 P 02976	Survey of Physiology DPHY1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Lecture or panel	10/55	Specially arranged	50
36 P 02980	Physiology of the Cardiovascular System [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	15	Small group discussion Lecture or panel	Anytime	Specially arranged	150
36 P 02981	Physiology of Respiration [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	12	Small group discussion Lecture or panel	Anytime	Specially arranged	100
36 P 02982	Physiology of the Nervous System DPHY1036 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	12	Small group discussion Lecture or panel	Anytime	Specially arranged	120
36 P 02983	Physiology of the Sense Organs DPHY1066 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	8	Small group discussion Lecture or panel	Anytime	Specially arranged	80
36 P 02984	Physiology of the Immune Response DPHY1076 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	8	Small group discussion Lecture or panel	Anytime	Specially arranged	80
36 P 02985	Physiology of the Kidney and Water Balance DPHY1086 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	8	Small group discussion Lecture or panel	Anytime	Specially arranged	80
36 P 02986	Physiology of the Body Fluids and Electrolytes DPHY1096 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	10	Small group discussion Lecture or panel	Anytime	Specially arranged	160

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Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		36. PHYSIOLOGY—Continued							
36 P 02991	Physiology of the Endocrine System DPHY1106 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	8	Small group discussion Lecture or panel	Anytime	Specially arranged	80
36 P 02671	Physiology PM 32—Normal and Pathological Physiology	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	52	Lecture or panel	10/19/55	I; 2 hr. weekly for 26 wk. Wednesdays	150
36 P 04293	Clinical Pulmonary Physiology [149]	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	Unknown	Laboratory work Clinical case work	Spring, 1956	C; 2 days	20
		37. PLASTIC SURGERY							
37 P 02483	Otolaryngologic Plastic Surgery [157]	Manhattan General Hospital 307 Second Ave., New York	S	S	56	Laboratory work Clinical case work	Fall, 1955	C; 7 days	125
		38. PROCTOLOGY							
38 P 01121	Proctology [5, 18]	Los Angeles Graduate School of Medicine 1858 W. Washington Blvd., Los Angeles	R	B	14	Small group discussion Lecture or panel	10/20/55	I; 2 hr. weekly for 7 wk. Thursdays	Unknown
38 P 01698	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	9/13/55	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01699	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	10/11/55	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01694	Proctology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	10/26/55	I; 2 hr. weekly for 5 wk. Wednesdays	100
38 P 01700	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	11/15/55	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01695	Proctology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	1/25/56	I; 2 hr. weekly for 5 wk. Wednesdays	100
38 P 01702	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	2/ 7/56	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01701	Prostoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	1/ 3/56	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01696	Proctology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	3/ 7/56	I; 2 hr. weekly for 5 wk. Wednesdays	100
38 P 01703	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	3/13/56	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01704	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	4/17/56	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01705	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	5/15/56	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 01697	Proctology [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	5/23/56	I; 2 hr. weekly for 5 wk. Wednesdays	100
38 P 01706	Proctoscopy and Sigmoidoscopy [5, 109]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	9	Clinical case work Operative surgery	6/ 5/56	I; 3 hr. weekly for 3 wk. Tuesdays	50
38 P 02324	Proctology for General Physicians [103, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	35	Lecture or panel	5/14/56	C; 1 wk.	40
38 P 08166	Proctology, Gastroenterology, Operative Proctology (Cadaver)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	150	Laboratory work Clinical case work	10/ 3/55	C; 6 wk.	200

38 P 03168	Clinical Proctology and Gastroenterology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	100	Laboratory work Clinical case work	10/ 3/55	C; 6 wk.	100
38 P 02781	Proctology[7, 32]	Jewish Hospital Brooklyn, N. Y.	R	G	21	Clinical case work Lecture or panel	10/55	I; 2 hr. twice weekly for 6 wk. Mondays, Fridays	40
38 P 03167	Proctology, Gastroenterology, Operative Proctology (Cadaver)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	150	Laboratory work Clinical case work	1/ 2/56	C; 6 wk.	200
38 P 03169	Clinical Proctology and Gastroenterology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	100	Laboratory work Clinical case work	1/ 2/56	C; 6 wk.	100
38 P 02799	Proctology[7, 32]	Jewish Hospital Brooklyn, N. Y.	R	G	21	Clinical case work Lecture or panel	4/56	I; 2 hr. twice weekly for 6 wk. Mondays, Fridays	10
38 P 03170	Clinical Proctology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	80	Laboratory work Clinical case work	Arranged	Specially arranged	75
38 P 03172	Proctology (Clinical and Cadaver)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	120	Laboratory work Clinical case work	Arranged	Specially arranged for 6 wk.	175
38 P 04177	Proctology[107, 206]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	88	Small group discussion Demonstration	Arranged	Specially arranged for 2 wk.	25

39. PSYCHIATRY

39 P 01273	Basic Psychiatry[116]	Connecticut State Hospital Silver Street, Middletown, Conn.	S	S	51	Lecture or panel	1/ 9/56	I; 6 hr. weekly for 9 wk. Mondays	Nil
39 P 01858	Recent Developments in Psychiatry for the Internist[53, 241]	Menninger Psychiatric Clinic and Hospital 3617 W. Sixth St., Topeka, Kan.	S	B	32½	Small group discussion Lecture or panel	10/24/55	C; 5 days	30 to members
39 P 02329	Psychiatric Principles in General Practice[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	Unknown	Small group discussion	9/ 6/55	C; 4 days	130
39 P 02693	Psychiatry PM 1—Symposium on Neurology and Psychiatry	Columbia-Presbyterian Medical Center 630 W. 168th St., New York 32	S	S	350	Laboratory work Lecture or panel	10/ 3/55	C; 10 wk.	300
39 P 03459	Development of Psychoanalytic Thinking	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	S	B	22½	Lecture or panel	10/10/55	I; 1½ hr. weekly for 15 wk. Mondays	40
39 P 03461	Psychiatric Films	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	S	B	36	Lecture or panel Movie showings	10/17/55	I; 2 hr. every 2 wk. for 36 wk. Mondays	Nil
39 P 02780	Child Psychiatry[7, 8]	Kings County Hospital Brooklyn, N. Y.	R	G	10	Clinical case work Small group discussion	10/55	I; 1 hr. weekly for 10 wk. Mondays	20
39 P 03462	Cultural Aspects of Psychotherapy[278]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	S	B	22½	Small group discussion	2/13/56	I; 1½ hr. weekly for 15 wk. Mondays	30
39 P 03515	Psychiatric Problems in General Practice[5]	University of Buffalo School of Medicine 3435 Main St., Buffalo	R	G	7	Clinical case work Small group discussion	2/23/56	C; 1 day	15
39 P 02796	Child Psychiatry[7, 8]	Kings County Hospital Brooklyn, N. Y.	R	G	10	Clinical case work Lecture or panel	4/56	I; 1 hr. weekly for 10 wk. Mondays	20
39 P 02987	Introduction to Child Psychiatry DPS1036	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Lecture or panel	Anytime	Specially arranged	30
39 P 02988	Readings in Psychoanalytic Literature DPS1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Small group discussion Lecture or panel	Anytime	Specially arranged	40
39 P 02989	Psychoanalysis and Psychiatry DPS1036	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Small group discussion Lecture or panel	Anytime	Specially arranged	40
39 P 03910	Clinicobiologic Neurology and Psychiatry[10]	Graduate School of Medicine, University of Pennsylvania Philadelphia	R	B	440	Laboratory work Clinical case work	9/26/55	C; 11 wk.	300
39 P 01295	Practical Psychiatry[209]	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	38	Clinical case work Small group discussion	7/56	C; 5 days	50

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Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
40. PSYCHOANALYSIS									
40 P 02504	Readings in Psychoanalysis, Part 2—The Works of Freud [16, 31]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	S	B	30	Lecture or panel	9/12/55	I; 1½ hr. weekly for 20 wk. Thursdays	60
40 P 02499	Readings in Psychoanalysis, Part 1—The Works of Karen Horney [16, 31]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	S	B	37½	Lecture or panel	9/13/55	I; 1½ hr. weekly for 25 wk. Tuesdays	75
40 P 02502	Clinical Conferences on Case Histories I [64]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	S	B	15	Clinical case work	9/23/55	I; 1½ hr. weekly for 10 wk. Fridays	30
40 P 02507	Group Psychodynamics and Group Psychoanalysis [153, 309, 16]	New School for Social Research 66 W. 12th St., New York	S	B	22½	Lecture or panel	9/25/55	I; 1½ hr. weekly for 15 wk. Tuesdays	24
40 P 02506	Workshop on Dynamics of Behavior [309, 153, 16]	New School for Social Research 66 W. 12th St., New York	S	B	22½	Clinical case work Lecture or panel	10/ 3/55	I; 1½ hr. weekly for 15 wk. Mondays	35
40 P 03525	Social Psychology [158, 101]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	B	15	Lecture or panel	10/ 3/55	I; 1½ hr. weekly for 10 wk. Mondays	40
40 P 03533	Modern Conceptions of Psychoanalysis B-1 [158, 101]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	B	9	Lecture or panel	10/ 3/55	I; 1½ hr. every 2 wk. for 2 mo. Mondays	20
40 P 03526	Basic Psychoanalytic Principles and Seminar [158, 159]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	B	22	Small group discussion Lecture or panel	10/ 4/55	I; 2 hr. weekly for 2½ mo. Tuesdays	45
40 P 03540	Seminar on Child Therapy CS-15 [158, 160]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	S	20	Clinical case work Small group discussion	10/ 5/55	I; 2 hr. weekly for 10 wk. Wednesdays	40
40 P 03532	The Significance of Physical Symptoms in Personality Disorders A-11 [158, 160]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	G	12	Lecture or panel	10/ 6/55	I; 1½ hr. weekly for 8 wk. Thursdays	25
40 P 02990	Comprehensive Course in Psychoanalysis DPS1066	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	3 yr.	Clinical case work Lecture or panel	10/55	C; 3 yr.	500
40 P 03528	Evolution of Psychoanalytic Concepts and Seminar A-3 and AS-3 [158, 161]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	B	22	Small group discussion Lecture or panel	1/11/56	I; 2 hr. every 2 wk. for 5 mo. Wednesdays	45
40 P 03541	Interpersonal Factors in Clinical Psychotherapy with Adolescents CS-34 [158, 160]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	S	15	Clinical case work Small group discussion	1/17/56	I; 1½ hr. weekly for 10 wk. Tuesdays	35
40 P 03534	Case Seminar on the Team Work Approach in Therapy CS-10 [158, 160]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	S	16	Clinical case work Small group discussion	1/23/56	I; 2 hr. every 2 wk. for 3 mo. Mondays	35
40 P 03542	Seminar on Psychotherapeutic Management of Hospitalized Patients CS-16 [158, 9]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	S	17½	Clinical case work Small group discussion	1/30/56	I; 1¾ hr. every 2 wk. for 5 mo. Mondays	50
40 P 03531	Literature of Psychoanalysis, Part 1 A-10 [158, 102]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	B	16½	Lecture or panel	1/31/56	I; 1½ hr. every 2 wk. for 5 mo. Tuesdays	35
40 P 03537	Practical Seminar for Physicians CS-11 [158, 160]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	G	15	Clinical case work Small group discussion	2/ 1/56	I; 1½ hr. every 2 wk. for 4 mo. Wednesdays	30
40 P 03529	Anthropology and the Comparative Study of Civilization A-4 [158, 84]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology	S	B	15	Lecture or panel	2/ 3/56	I; 1½ hr. every 2 wk. for 4 mo. Fridays	30

40 P 02505	The Practice of Group Psychoanalysis [16, 19]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	S	B	15	Clinical case work Lecture or panel	2/ 3/56	I; 1½ hr. weekly for 10 wk. Fridays	30
40 P 02508	Love, Sex, and Marriage (A Workshop) [243, 309, 16]	New School for Social Research 66 W. 12th St., New York	S	B	22½	Clinical case work Lecture or panel	2/ 6/56	I; 1½ hr. weekly for 15 wk.	35
40 P 02509	Neuroses and Psychoses [243, 309, 16]	New School for Social Research 66 W. 12th St., New York	S	B	22½	Lecture or panel	2/ 7/56	I; 1½ hr. weekly for 15 wk. Tuesdays	24
40 P 03538	Seminar on Current Issues in Psychoanalysis CS-14 [158, 100]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	S	12	Small group discussion	2/10/56	I; 1½ hr. every 2 wk. for 3 mo. Fridays	25
40 P 03530	Psychological Development of the Normal Child A-8 [158, 101]	The William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology 12 E. 86th St., New York 28	S	B	6	Small group discussion Lecture or panel	4/23/56	I; 3 hr. twice weekly for 1 wk. Monday, Thursday	30
40 P 02977	Introduction to Psychoanalysis DPS1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Small group discussion Lecture or panel	Anytime	Specially arranged	30

41. PSYCHOSOMATIC MEDICINE

41 P 03160	Seminar on Psychosomatic Medicine	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	S	B	22½	Lecture or panel	10/13/55	I; 1½ hr. weekly for 15 wk. Thursdays	30
41 P 02503	The Neurotic Patient in Medical Practice [101]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	S	B	15	Clinical case work Lecture or panel	2/ 2/56	I; 1½ hr. weekly for 10 wk. Thursdays	30
41 P 02978	Seminar on Psychosomatic Medicine DPS1026	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Small group discussion Lecture or panel	Anytime	Specially arranged	40

42. PULMONARY DISEASE

42 P 01469	Postgraduate Course in Diseases of the Chest [230]	Hotel (not named as yet) Los Angeles	S	B	40	Lecture or panel	12/ 5/55	C; 5 days	75
42 P 01253	Eighth Annual Symposium on Pulmonary Diseases [38]	Fitzsimons Army Hospital Denver 8	R	B	40	Lecture or panel Demonstration	9/26/55	C; 5 days	Unknown
42 P 01556	Symposium on Pulmonary Diseases [5, 163]	Fitzsimons Army Hospital Denver 8	R	B	40	Clinical case work Lecture or panel	9/26/55	C; 5 days	Nil
42 P 01167	10th Annual Postgraduate Course in Diseases of the Chest [230, 53]	Hotel Knickerbocker East Walton Street, Chicago	S	B	40	Lecture or panel	10/ 3/55	C; 5 days	75
42 P 01809	Lung Diseases and Pulmonary Function [31, 5]	Indiana University School of Medicine 1100 W. Michigan St., Indianapolis	R	B	8	Laboratory work Clinical case work	5/23/56	C; 1 day	10
42 P 01867	Chest Diseases [104]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	S	B	14	Clinical case work Small group discussion	1/23/56	C; 2 days	30
42 P 02911	The Measurement of Pulmonary Function in Health and Disease [200, 328]	Dowling Amphitheatre, Boston City Hospital Boston	S	B	38	Demonstration	3/26/56	C; 5 days	50
42 P 03514	Diseases of the Chest [5]	University of Buffalo School of Medicine 3135 Main St., Buffalo	R	G	7	Clinical case work Small group discussion	11/17/55	C; 1 day	15
42 P 01468	Eighth Annual Postgraduate Course in Diseases of the Chest [230, 231]	Hotel (not definitely assigned) New York	S	B	40	Lecture or panel	11/55	C; 5 days	75
42 P 03299	518-A Acute and Chronic Diseases of the Chest [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	14	Lecture or panel Demonstration	4/ 9/56	I; 2 hr. weekly for 7 wk. Mondays	35
42 P 03195	Symposium on Tuberculosis and Other Chronic Pulmonary Disease [207, 5, 274]	Laboratories in Saranac Lake, N. Y. P. O. Box 2, Saranac Lake, N. Y.	R	G	26	Laboratory work Clinical case work	7/ 9/56	C; 5 days	40
42 P 03011	Postgraduate Course in Pulmonary Diseases [125]	Ohio Tuberculosis Hospital Ohio State University Campus Columbus, Ohio	R	G	10	Lecture or panel Demonstration	10/ 7/55	C; 2 days	15
P 03720	Postgraduate Course in Pulmonary Diseases	College of Medicine, Ohio State University Columbus, Ohio	R	G	11	Lecture or panel	10/ 7/55	C; 1½ days	15
		of Medicine, Ohio State	R	G	11	Lecture or panel	10/ 7/55	C; 1½ days	15

Postgraduate Continuation Courses for Physicians— ept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
	42. PULMONARY DISEASE—Continued								
42 P 03637	Lung Disease[202]	Academy of Medicine of Cleveland and Cuyahoga County 2009 Adelbert Rd., Cleveland 6	S	B	3	Lecture or panel	3/16/56	C; 1 day	Nil
42 P 01217	Diseases of the Chest (Including Pulmonary and Cardio-Respiratory Diseases)[297]	Roosevelt Hotel Pittsburgh	R	B	16	Lecture or panel	10/ 2/55	I; 4 hr. weekly for 4 wk Sundays	Unknown
42 P 01470	Ninth Annual Postgraduate Course in Diseases of the Chest[230, 53]	Hotel Bellevue Stratford Philadelphia	S	B	40	Lecture or panel	3/56	C; 5 days	75
42 P 04134	Chest Diseases[292, 5]	The University of Texas, Southwestern Medical School 5323 Harry Hines Blvd., Dallas, Texas	R	G	14	Lecture or panel	5/56	C; 2 days	5
42 P 04183	Diseases of the Chest[13, 206]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	88	Laboratory work Small group discussion	Arranged	Specially arranged	25
	43. RADIOLOGY								
43 P 01089	Roentgen Diagnosis and Roentgen Therapy[64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	31	Small group discussion Demonstration	10/ 4/55	I; 1 hr. weekly for 31 wk. Tuesdays	100
43 P 01223	882: (A) The Essential Physics of Therapeutic Radiology and (B) Clinical Applications of Radioactive Isotopes	University of Southern California School of Medicine 2025 Zonal Ave., Los Angeles 33	S	S	24	Lecture or panel	Spring, 1956	I; 2 hr. weekly for 12 wk. Mondays	75
43 P 01296	Radiology 302—Introduction to X-Rays and Radioisotopes	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	12	Lecture	9/29/55	I; 1 hr. weekly for 12 wk.	25
43 P 01303	Radiology 304—Radioactivity	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	30	Laboratory work Lecture or panel	3/15/56	I; 3 hr. weekly for 10 wk. Thursdays	100
43 P 01302	Radiology 303—X-Ray Physics	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	20	Laboratory work Lecture or panel	5/ 1/56	I; 2 hr. weekly for 10 wk.	25
43 P 03838	American Roentgen Ray Society —Instructional Courses[105, 106]	Palmer House State Street, Chicago	R	S	6	Small group discussion Lecture or panel	9/20/55	C; 4 days	1.50
43 P 04601	Diagnostic Roentgenology[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	40	Laboratory work Clinical case work	9/21/55	I; 4 hr. weekly for 10 wk. Wednesdays	100
43 P 01658	Course I—Diagnostic Radiology[5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	68	Laboratory work Clinical case work	10/ 3/55	C; 2 wk.	125
43 P 01668	The Clinical Uses of Radioisotopes[5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	10/10/55	C; 2 wk.	200
43 P 03489	Instructional Courses[235, 236]	Palmer House Chicago	R	S	76½	Lecture or panel	12/11/55	Specially arranged	15
43 P 01659	Course I—Diagnostic Radiology[5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	68	Laboratory work Clinical case work	1/ 9/56	C; 2 wk.	125
43 P 01660	Course I—Diagnostic Radiology[5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	68	Laboratory work Clinical case work	2/27/56	C; 2 wk.	125
43 P 04602	Diagnostic Roentgenology[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	40	Laboratory work Clinical case work	3/21/56	I; 4 hr. weekly for 10 wk. Wednesdays	100
43 P 01671	The Clinical Use of Radioactive Iodine[5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Laboratory work Clinical case work	4/ 2/56	C; 1 wk.	100
43 P 01661	Course I—Diagnostic Radiology[5, 117]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	68	Laboratory work Clinical case work	5/ 7/56	C; 2 wk.	125
43 P 01669	The Clinical Uses of Radioisotopes[5, 130]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	5/ 7/56	C; 2 wk.	200

		S. Wood St., Chicago 12			--	Laboratory work Clinical case work	5/21/56	C; 1 wk.	100
	Course 2—Clinical Radiology [5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	50	Laboratory work Clinical case work	Arranged	C; 2 wk.	70
43 P 01663	Course 2—Clinical Radiology [5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	100	Laboratory work Clinical case work	Arranged	C; 1 wk.	125
43 P 01664	Course 3—X Ray Therapy [5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Laboratory work Clinical case work	Arranged	C; 1 wk.	60
43 P 01665	Course 3—X-Ray Therapy [5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	Arranged	C; 2 wk.	110
43 P 01666	Course 3—X-Ray Therapy [5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	120	Laboratory work Clinical case work	Arranged	C; 4 wk.	200
43 P 01667	Course 3—X-Ray Therapy [5, 21]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	210	Laboratory work Clinical case work	Arranged	C; 8 wk.	300
43 P 01911	Radiologic Considerations of Pulmonary, Urological and Bone Disease [101]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	R	B	16	Lecture or panel Demonstration	11/17/55	C; 2 days	25
43 P 01869	Radiology and Radioactive Isotopes [187]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	S	B	24	Clinical case work Lecture or panel Demonstration	2/13/56	C; 4 days	45
43 P 02032	Pediatric Radiology [187, 310]	Children's Hospital 300 Longwood Ave., Boston	S	S	125	Laboratory work Clinical case work	Arranged	Specially arranged for 1 wk.	150
43 P 02033	General Radiology 1 [187, 310]	Peter Bent Brigham Hospital 721 Huntington Ave., Boston	S	S	125	Laboratory work Clinical case work	Arranged	Specially arranged for 1 wk.	150
43 P 02035	General Radiology 2 [15, 310]	Massachusetts General Hospital Fruit Street, Boston	S	S	125	Laboratory work Clinical case work	Arranged	Specially arranged for 1 wk.	150
43 P 02036	General Radiology 3 [187, 310]	Boston City Hospital 818 Harrison Ave., Boston	S	S	125	Laboratory work Clinical case work	Arranged	Specially arranged for 1 wk.	150
43 P 02169	Diagnostic Radiology [41]	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	B	20	Lecture or panel	4/56	C; 5 days	50
43 P 02307	Radiology for Specialties [33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	S	32	Lecture or panel	11/ 7/55	C; 1 wk.	40
43 P 02320	Radiology for General Physicians [33, 5]	University of Minnesota Center for Continuation Study Minneapolis	R	G	16	Lecture or panel	4/ 9/56	C; 3 days	25
43 P 03382	651-A Diagnostic Radiology for General Practitioners [58]	New York University Post-Graduate Medical School 550 First Ave., New York	S	G	61	Lecture or panel	9/28/55	I; 2 hr. weekly for 32 wk. Wednesdays	100
43 P 03157	Roentgen Interpretation	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	480	Laboratory work Clinical case work	10/ 3/55	C; 12 wk.	300
43 P 03159	Advanced Diagnostic Roentgenology and Radiotherapy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	480	Laboratory work Clinical case work	10/ 3/55	C; 12 wk.	300
43 P 02677	Radiology PM 80—Roentgenographic Interpretation of the Diseases of Bones and Joints	Hospital for Joint Disease 1919 Madison Ave., New York	R	G	26	Lecture or panel Demonstration	10/ 5/55	I; 2 hr. weekly for 13 wk. Wednesdays	150
43 P 03381	650-A Isotopes and Their Medical Application [95]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	72	Laboratory work Clinical case work	10/ 5/55	I; 2 hr. weekly for 36 wk. Wednesdays	250
43 P 02699	Radiology PM 41—Clinical Use of Radioactive Isotopes [150]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	100	Laboratory work Lecture or panel	10/ 6/55	I; 3 hr. weekly for 8 mo. Thursdays	200
43 P 02695	Radiology PM 30—Introduction to Nuclear Radiation Physics [8]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	45	Laboratory work Lecture or panel	10/12/55	I; 1½ hr. twice weekly for 15 wk. Wednesdays, Thursdays	100
43 P 02072	Radiology PM 31—Radiology of the Chest [108]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	10½	Clinical case work Lecture or panel	10/17/55	C; 7 days	50

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		43. RADIOLOGY—Continued							
43 P 02675	Radiology PM 34—Differential Diagnosis in Radiology of the Chest [15]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	16½	Clinical case work Demonstration	10/31/55	I; 1½ hr. weekly for 11 wk. Mondays	50
43 P 02782	X-Ray Diagnosis [7, 108]	Jewish Hospital Brooklyn, N. Y.	R	G	22	Lecture or panel Demonstration	10/55	I; 2 hr. weekly for 11 wk. Tuesdays	30
43 P 02694	Radiology PM 1—Radiological Physics	Columbia-Presbyterian Medical Center 630 W. 168th St., New York	S	S	28	Lecture or panel	1/10/56	I; 1 hr. twice weekly for 14 wk. Tuesdays, Fridays	50
43 P 03383	654-A Radiobiology [9]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	40	Lecture or panel	1/26/56	I; 2 hr. weekly for 20 wk. Thursdays	75
43 P 04501	X-Ray Interpretation [51]	Albany Medical College 47 New Scotland Ave., Albany, N. Y	S	G	12	Small group discussion Demonstration	2/ 9/56	I; 2 hr. weekly for 6 wk. Thursdays	60
43 P 02674	Radiology PM 32—Roentgen Diagnosis of Lesions of the Gastrointestinal Tract [130]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	10	Clinical case work Lecture or panel	3/ 5/56	C; 10 days	50
43 P 02673	Radiology PM 31—Radiology of the Chest [108]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	10½	Clinical case work Lecture or panel	3/19/56	C; 7 days	50
43 P 02676	Radiology PM 34—Differential Diagnosis in Radiology of the Chest [15]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	16½	Clinical case work Demonstration	4/ 2/56	I; 1½ hr weekly for 11 wk. Mondays	50
43 P 03158	Roentgen Interpretation	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	480	Laboratory work Clinical case work	4/ 2/56	C; 12 wk.	300
43 P 03160	Advanced Diagnostic Roentgenology and Radiotherapy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	480	Laboratory work Clinical case work	4/ 2/56	C; 12 wk.	300
43 P 02696	Radiology PM 33—Radium Therapy	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	14	Lecture or panel	4/20/56	I; 1 hr. twice weekly for 7 wk. Tuesdays, Fridays	50
43 P 02790	Roentgen Diagnosis in Gastroenterology [7, 16]	Beth-El Hospital Brooklyn, N. Y.	R	G	8	Lecture or panel Demonstration	4/56	I; 1 hr. weekly for 8 wk. Tuesdays	20
43 P 02791	X-Ray Diagnosis [7, 108]	Jewish Hospital Brooklyn, N. Y.	R	G	22	Lecture or panel	4/56	I; 2 hr. weekly for 11 wk. Tuesdays	30
43 P 02698	Radiology PM 40—Clinical Use of Radioactive Isotopes [112]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	170	Laboratory work Lecture or panel	6/ 4/56	C; 5 wk.	200
43 P 02916	Roentgenology 68C1 (of the Eye and Ear) [91]	The New York Eye and Ear Infirmary 218 Second Ave., New York	R	S	40	Demonstration	Inquire	C; 1 wk.	50
43 P 03000	Diagnostic Roentgenology DR1016	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	Unknown	Clinical case work Interpretation and technique	Anytime	Specially arranged	150
43 P 03001	Radium and Roentgen Therapy DR1026	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Clinical case work Small group discussion	Anytime	Specially arranged	150
43 P 02697	Radiology PM 35—Use of Radioactive Iodine [187]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	500	Laboratory work Small group discussion	Arranged	Specially arranged	300
43 P 02700	Radiology PM 51—Radiotherapy	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	S	S	1000	Laboratory work Clinical case work	Arranged	Specially arranged 6 or 12 mo.	300 for 6 mo.; 600 for 12 mo.
43 P 03162	Diagnostic Roentgenology and Radiation Therapy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	1920	Laboratory work Clinical case work	Arranged	Specially arranged	1000
43 P 03663	Radiological Health—Basic Course [127, 5, 16]	Robert A. Taft Sanitary Engineering Center 4676 Columbia Parkway, Cincinnati 26	S	B	60	Laboratory work Lecture or panel	1/ 9/56	C; 2 wk.	Nil
43 P 03666	Radiological Health—Occupational Radiation Protection [127, 5, 16]	Robert A. Taft Sanitary Engineering Center 4676 Columbia Parkway, Cincinnati 26	S	B	60	Laboratory work Lecture or panel	1/23/56	C; 2 wk.	Nil

43 P 03664	Radiological Health—Basic Course[127, 5, 10]	Robert A. Taft Sanitary Engineering Center 1076 Columbia Parkway, Cincinnati 26	S	B	60	Laboratory work Lecture or panel	1/16/56	C; 2 wk.	Nil
43 P 03665	Radiological Health—Environmental Radiation Sanitation[127, 5, 10]	Robert A. Taft Sanitary Engineering Center 1076 Columbia Parkway, Cincinnati 26	S	B	60	Laboratory work Lecture or panel	1/30/56	C; 2 wk.	Nil
43 P 03795	Radiobiology[28, 5, 10]	Reed College Portland 2, Ore.	S	B	438	Laboratory work Small group discussion	8/ 1/56	C; 25 wk.	Upon request
43 P 01100	Radiology[51, 5]	University of Tennessee Medical College 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	9/21/55	C; 3 days	50
43 P 01173	X-Ray Interpretation[200]	The University of Texas Postgraduate School of Medicine, San Angelo Division 219 S. Magdalen, San Angelo, Texas	R	B	18	Demonstration	9/11/55	I; 2 hr. monthly for 9 mo. Sundays	18
43 P 01166	X-Ray Interpretation	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	G	22	Lecture or panel	2/ 6/56	I; 2 hr. weekly for 11 wk. Mondays	25

44. SURGERY

44 P 01110	Cardiac Resuscitation Course[50, 63]	Southern California Medical Research Building 2025 Zonal Ave., Los Angeles	S	B	3	Laboratory work Operative surgery	9/55	Specially arranged	30
44 P 01135	General Surgery[175]	Mercy Hospital Hillcrest Drive, San Diego, Calif.	R	B	50	Lecture or panel	7/56	I; 1 hr. weekly for 50 wk. Saturdays	Nil
44 P 01224	873: Cardiac Resuscitation[63, 183, 184]	University of Southern California School of Medicine 2025 Zonal Ave., Los Angeles 33	S	B	3	Laboratory work	Continuous	C; 1 day	30
44 P 01351	Surgical Physiology[320, 5]	George Washington University Hospital 901 23rd St., N. W., Washington 7, D. C.	R	B	30	Lecture or panel	2/27/56	C; 5 days	75
44 P 01531	Course 1—Surgical Technic[10, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	9/12/55	C; 2 wk.	250
44 P 01679	Surgical Technic with Practice[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	50	Laboratory work Operative surgery	9/14/55	I; 5 hr. weekly for 10 wk. Wednesdays	250
44 P 01508	Surgery of the Colon and Rectum[18, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	35	Laboratory work Clinical case work	9/19/55	C; 1 wk.	125
44 P 01683	Panel Course in Gastrointestinal Surgery[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	60	Laboratory work Clinical case work	9/21/55	I; 6 hr. weekly for 10 wk. Wednesdays	250
44 P 01688	Clinical Surgery[5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Clinical case work Operative surgery	9/21/55	I; 3 hr. weekly for 10 wk. Wednesdays	150
44 P 01532	Course 1—Surgical Technic[10, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	9/26/55	C; 2 wk.	250
44 P 01560	Two-Week Intensive Review Course Considering Basic Principles in General Surgery[118, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	85	Laboratory work Clinical case work	9/26/55	C; 2 wk.	200
44 P 01555	General Surgery (A Two Week Course)[58, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	70	Laboratory work Clinical case work	10/ 3/55	C; 2 wk.	250
44 P 01533	Course 1—Surgical Technic[10, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	10/10/55	C; 2 wk.	250
44 P 01517	Course 2—General Surgery[10, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	100	Laboratory work Clinical case work	10/10/55	C; 4 wk.	325
44 P 01566	Esophageal Surgery[105, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Laboratory work Clinical case work	10/10/55	C; 1 wk.	150
44 P 01557	General Surgery (A One Week Course)[105, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Clinical case work Operative surgery	10/17/55	C; 1 wk.	150

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

44. SURGERY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
44 P 01569	Surgery of the Colon and Rectum [18, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	35	Laboratory work Clinical case work	10/17/55	C; 1 wk.	125
44 P 01551	Surgical Anatomy on the Cadaver and Clinical Surgery [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	100	Laboratory work Clinical case work	10/24/55	C; 2 wk.	150
44 P 01562	Breast and Thyroid Surgery [118, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	31	Laboratory work Clinical case work	10/24/55	C; 1 wk.	150
44 P 01575	Gallbladder Surgery [18, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	10/24/55	C; 3 days	100
44 P 01488	Cardiovascular Surgery	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
44 P 01489	Preoperative and Postoperative Care	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
44 P 01490	Gastrointestinal Tract	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
44 P 01491	Diseases of the Liver, Biliary Tract and Pancreas	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
44 P 01495	The Management of Injuries of the Hand	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
44 P 01534	Course I—Surgical Technic [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	11/ 7/55	C; 2 wk.	250
44 P 01681	Surgical Technic with Practice [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Laboratory work Operative surgery	11/22/55	I; 5 hr. weekly for 5 wk. Wednesdays	125
44 P 01535	Course I—Surgical Technic [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	11/28/55	C; 2 wk.	250
44 P 01570	Surgery of the Colon and Rectum [18, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	35	Laboratory work Clinical case work	11/28/55	C; 1 wk.	125
44 P 01536	Course I—Surgical Technic [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	1/23/56	C; 2 wk.	250
44 P 01558	General Surgery (A One Week Course) [105, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Clinical case work Operative surgery	2/13/56	C; 1 wk.	150
44 P 01680	Surgical Technic with Practice [5, 58]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	50	Laboratory work Operative surgery	2/ 8/56	I; 5 hr. weekly for 10 wk. Wednesdays	250
44 P 01537	Course I—Surgical Technic [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	2/ 6/56	C; 2 wk.	250
44 P 01538	Course I—Surgical Technic [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	2/20/56	C; 2 wk.	250
44 P 01571	Surgery of the Colon and Rectum [18, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	35	Laboratory work Clinical case work	2/27/56	C; 1 wk.	125
44 P 01548	Course II—General Surgery [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	190	Laboratory work Clinical case work	3/ 5/56	C; 4 wk.	325
44 P 01539	Course I—Surgical Technic [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	3/ 6/56	C; 2 wk.	250
44 P 01552	Surgical Anatomy on the Cadaver and Clinical Surgery [19, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	100	Laboratory work Clinical case work	3/19/56	C; 2 wk.	150

44 P 01689	Clinical Surgery $^{5, 58}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Clinical case work Operative surgery	3/21/56	I; 3 hr. weekly for 10 wk. Wednesdays	150
44 P 01561	Two-Week Intensive Review Course Considering Basic Principles in General Surgery $^{118, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	85	Laboratory work Clinical case work	3/26/56	C; 2 wk.	200
44 P 01540	Course I—Surgical Technic $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	4/ 2/56	C; 2 wk.	250
44 P 01572	Surgery of the Colon and Rectum $^{18, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	35	Laboratory work Clinical case work	4/ 9/56	C; 1 wk.	125
44 P 01576	Gallbladder Surgery $^{18, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	4/ 9/56	C; 3 days	100
44 P 01541	Course I—Surgical Technic $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	4/16/56	C; 2 wk.	250
44 P 01682	Surgical Technic $^{5, 58}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Laboratory work Operative surgery	4/18/56	I; 5 hr. weekly for 5 wk. Wednesdays	125
44 P 01556	General Surgery (A Two-Week Course) $^{58, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	70	Laboratory work Clinical case work	4/23/56	C; 2 wk.	250
44 P 01542	Course I—Surgical Technic $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	4/30/56	C; 2 wk.	250
44 P 01573	Surgery of the Colon and Rectum $^{18, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	35	Laboratory work Clinical case work	5/ 7/56	C; 1 wk.	125
44 P 01543	Course I—Surgical Technic $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	5/14/56	C; 2 wk.	250
44 P 01559	General Surgery (A One Week Course) $^{105, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Clinical case work Operative surgery	5/21/56	C; 1 wk.	150
44 P 01544	Course I—Surgical Technic $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	6/ 4/56	C; 2 wk.	250
44 P 01549	Course 2—General Surgery $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	190	Laboratory work Clinical case work	6/ 4/56	C; 4 wk.	325
44 P 01567	Esophageal Surgery $^{105, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	25	Laboratory work Clinical case work	6/11/56	C; 1 wk.	150
44 P 01574	Surgery of the Colon and Rectum $^{18, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	S	35	Laboratory work Clinical case work	6/11/56	C; 1 wk.	125
44 P 01625	Two Week Preassembly Postgraduate Course $^{5, 173, 310}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	S	B	90	Laboratory work Clinical case work	7/ 9/56	C; 2 wk.	150
44 P 01553	Surgical Anatomy on the Cadaver and Clinical Surgery $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	100	Laboratory work Clinical case work	6/18/56	C; 2 wk.	150
44 P 01563	Breast and Thyroid Surgery $^{118, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	34	Laboratory work Clinical case work	6/18/56	C; 1 wk.	150
44 P 01577	Gallbladder Surgery $^{18, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	6/25/56	C; 3 days	100
44 P 01545	Course I—Surgical Technic $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	7/23/56	C; 2 wk.	250
44 P 01546	Course I—Surgical Technic $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	90	Laboratory work Clinical case work	8/ 6/56	C; 2 wk.	250
44 P 01550	Course II—General Surgery $^{19, 5}$	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	190	Laboratory work Clinical case work	8/ 6/56	C; 4 wk.	325

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

44. SURGERY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
44 P 01554	Surgical Anatomy on the Cadaver and Clinical Surgery [10, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	100	Laboratory work Clinical case work	8/20/56	C: 2 wk.	150
44 P 01578	Treatment of Varicose Veins [91, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	Arranged	C: 2 days	50
44 P 01707	Treatment of Varicose Veins [5, 190]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	10	Laboratory work Clinical case work	Arranged	I; 5 hr weekly for 2 wk. Wednesdays	50
44 P 02014	General Surgery 1 [310, 313]	Massachusetts General Hospital Fruit Street, Boston	R	B	150	Clinical case work Small group discussion	10/ 3/55	C: 4 wk.	250
44 P 02007	Surgical Anatomy [51]	Harvard Medical School 25 Shattuck St., Boston	S	S	110	Laboratory work Clinical case work	3/ 5/56	C: 8 wk.	200
44 P 02021	General Surgery 1 [310, 313]	Massachusetts General Hospital Fruit Street, Boston	R	B	150	Clinical case work Small group discussion	5/14/56	C: 4 wk.	250
44 P 02034	General Surgery 2 [102, 310]	Massachusetts General Hospital Fruit Street, Boston	S	S	Unknown	Laboratory work Clinical case work	Arranged	Specially arranged for 3 mo.	200
44 P 02160	Clinical Exercises for Practitioners [20]	Department of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	R	B	48	Lecture or panel Demonstration	10/ 5/55	I: 4 hr. weekly for 12 wk. Wednesdays	25
44 P 02311	Emergency Surgery for General Physicians [33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Lecture or panel	1/30/56	C: 3 days	25
44 P 02325	Surgery for Surgeons [5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	S	16	Lecture or panel	5/24/56	C: 3 days	25
44 P 01866	Surgery [170]	University of Kansas Medical Center 39th and Rainbow Blvd., Kansas City 12, Kan.	S	B	28	Operative surgery Small group discussion	1/16/56	C: 4 days	60
44 P 02227	Surgery Seminar	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	11	Lecture or panel	Unknown	I: 1 hr. weekly for 11 wk.	15
44 P 02440	Surgical Anatomy [5, 169]	Seton Hall University South Orange, N. J.	S	B	40	Lecture or panel Demonstration	11/11/55	I: 2 hr. weekly for 20 wk. Fridays	200
44 P 02437	1. Vascular Surgery 2. Abdominal Surgery [148]	Seton Hall University South Orange, N. J.	S	B	40	Unknown	11/14/55	I; 2 hr. weekly for 20 wk. Mondays	100
44 P 03388	663-A Recent Advances in Surgery [127]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	70	Lecture or panel Demonstration	9/19/55	C; 2 wk.	200
44 P 01496	Dissection of Upper and Lower Extremities Correlated with Clinical Surgery	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	S	B	42	Cadaver dissection with clinical correlation	9/20/55	I; 3½ hr. weekly for 12 wk. Tuesdays	200
44 P 03092	Clinical and Operative (Cadaver) Surgery [102]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	164	Laboratory work Clinical case work	10/ 3/55	C: 4 wk.	200
44 P 03094	Clinical Surgery [102]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	141	Laboratory work Clinical case work	10/ 3/55	C: 4 wk.	100
44 P 03095	Combined Surgical Course Including Cadaver Surgery and Gynecology [51]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	420	Laboratory work Clinical case work	10/ 3/55	C; 8 wk.	350
44 P 02678	Surgery PM 31—Minor Surgery [102]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	27	Clinical case work Small group discussion	10/ 3/55	C: 3 days	75
44 P 03386	661-A Review of General Surgery [127]	New York University Post-Graduate Medical School 550 First Ave., New York	R	S	140	Lecture or panel Demonstration	10/ 3/55	C; 4 wk.	300
44 P 02783	Office Surgery [7]	St. John's Episcopal Hospital Brooklyn, N. Y.	R	G	12	Clinical case work Lecture or panel	10/55	I; 1½ hr. weekly for 8 wk. Tuesdays	20
44 P 02472	Postgraduate Clinical Seminar	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	6	Small group discussion	11/10/55	C: 1 day	10

11 P 02177	Recent Advances in Surgery Including Surgical Specialties	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	20	Small group discussion Lecture or panel	11/10/55	C; 2½ days	25
41 P 03389	6612-A Cardiac Arrest and Resuscitation [18]	New York University Post-Graduate Medical School 550 First Ave., New York	Unknown	B	8	Lecture or panel *Slides and movies*	11/11/55	C; 1 *day*	50
41 P 02680	Surgery PM 32—Office Proctology	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	14	Clinical case work Small group discussion	11/14/55	C; 2 days	50
41 P 03391	661-A Trauma (Excluding Fractures) [31]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	39	Laboratory work Small group discussion	11/28/55	C; 5½ days	125
41 P 03392	666-A Diagnosis and Treatment of Trauma [58]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	42	Lecture or panel Demonstration	12/ 5/55	C; 6 days	90
44 P 04497	Dissection of Thorax and Abdomen Correlated with Clinical Surgery	Albany Medical College 47 New Scotland Ave., Albany, N. Y	S	B	42	Cadaver dissection with clinical correlation	12/13/55	I; 3½ hr. weekly for 12 wk. Tuesdays	200
44 P 02679	Surgery PM 31—Minor Surgery [102]	Mount Sinai Hospital Fifth Avenue and 100th Street, New York	R	G	27	Clinical case work Small group discussion	1/ 9/56	C; 3 days	75
41 P 03385	660-A Physiological and Pharmacological Principles Underlying the Surgical Management of Diseases of and Pertaining to the Parasympathetic and Sympathetic Nervous System [53]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	42	Demonstration Cadaver discussions	1/16/56	C; 6 days	150
44 P 03387	662-A Basic Problems in Cancer Therapy (For Surgeons) [127]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	84	Lecture or panel Demonstration	1/23/56	C; 12 days	200
41 P 03394	668-A *Diagnosis* and Treatment of Fractures and Dislocations [58]	New York *University* Post-Graduate Medical School 550 First Ave., New York	S	B	70	Clinical case work Lecture or panel	1/30/56	C; 2 wk.	Unknown
41 P 02681	Surgery PM 32—Office Proctology	Mount Sinai Hospital Fifth Avenue and *100th Street*, New York	R	G	14	Clinical case work *Small* group discussion	2/20/56	C; 2 days	50
41 P 01498	Dissection of Head and Neck Correlated with Clinical Surgery	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	S	B	42	Cadaver dissection *with clinical* correlation	3/13/56	I; 3½ hr. weekly for 12 wk. Tuesdays	200
41 P 03393	667-A Surgery of the Hand [58]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	42	Lecture or panel Demonstration	3/19/56	C; 6 days	90
41 P 01101	Operative Surgery [19]	College of Medical Evangelists 1720 *Brooklyn Ave., Los Angeles* 33	R	S	30	Operative surgery Small group discussion	3/21/56	I; 2½ hr. weekly for 12 wk. Wednesdays	200
41 P 03390	6612-B Cardiac Arrest and Resuscitation [18]	New York University Post-Graduate Medical School 550 First Ave., New York	Unknown	B	8	Lecture or panel Slides and movies	3/23/56	C; 1 day	50
41 P 03096	Combined Surgical Course Including Cadaver Surgery and Gynecology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	420	Laboratory work Clinical case work	4/2/56	C; 8 wk.	350
41 P 03097	Clinical Surgery	New York Polyclinic Medical School and Hospital 345 W 50th St., New York 19	R	G	144	Laboratory work Clinical case work	4/2/56	C; 4 wk.	100
41 P 03098	*Clinical* and *Operative* (Cadaver) Surgery	*New York Polyclinic Medical School* and Hospital 345 *W. 50th St., New York 19*	*R*	B	164	*Laboratory work* Clinical case work	4/2/56	C; 4 wk.	100
41 P 03102	Anatomy--Surgical (A)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	18	Laboratory work Small group discussion	Arranged	Specially arranged for 2 wk.	300
41 P 03103	Anatomy—Surgical (C)	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	18	Laboratory work Operative surgery	Arranged	Specially arranged for 2 wk.	300
41 P 03002	Surgical Aspects of Peripheral *Vascular Diseases DS1046* [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	Unknown	Small group discussion Demonstration	Anytime	Specially arranged	200
41 P 03003	Gastrointestinal Surgery DS1026 [32]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	Unknown	Small group discussion Demonstration	Anytime	Specially arranged	200
41 P 03001	Peritoneoscopy *DS1036* [32]	New York Medical *College, Flower* and Fifth Avenue Hospitals 1 E. 105th St., New York	S	B	*Unknown*	Small group discussion Lecture or panel	Anytime	Specially arranged	100

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

44. SURGERY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
44 P 03005	Surgical Technique DS1046	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	Unknown	Small group discussion Lecture or panel	Anytime	Specially arranged	375
44 P 03580	Postgraduate Course in Surgery [77, 5]	N. C. Memorial Hospital Chapel Hill, N. C.	R	B	18	Lecture or panel	9/28/55	C; 3 days	20
44 P 03652	Review Course in General Surgery [53]	Frank E. Bunts Educational Institute 2020 E. 93rd St., Cleveland	R	B	10	Lecture or panel	11/ 9/55	C; 2 days	15
44 P 03806	General Surgery [169]	University of Oregon Medical School 3181 S. W. Sam Jackson Park Rd. Portland, Ore.	R	B	38	Clinical case work Operative surgery	10/10/55	C; 5 days	50
44 P 04107	Abdominal Surgery [51, 5]	University of Tennessee Medical College 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	11/23/55	C; 3 days	50
44 P 04100	Emergency Surgery—Acute Injuries [51, 5]	University of Tennessee Medical College 874 Union Ave., Memphis, Tenn.	R	G	23	Clinical case work Small group discussion	7/27/56	C; 3 days	50
44 P 04133	Surgery of Trauma [207, 5]	The University of Texas Southwestern Medical School 5323 Harry Hines Blvd., Dallas, Texas	R	B	21	Lecture or panel	12/ 5/55	C; 3 days	30
44 P 04184	Fourth Postgraduate Conference in Medicine and Surgery [208, 206]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	S	B	27	Laboratory work Clinical case work	3/ 5/56	C; 3 days	5
44 P 04296	General Surgery [209, 5]	University of Washington School of Medicine Health Sciences Building, Seattle	R	B	Unknown	Clinical case work Lecture or panel	Spring, 1956	To be arranged	Unknown
44 P 04368	Observation Course in Surgery	University of Wisconsin Medical School 418 N. Randall Ave., Madison, Wis.	R	S	Variable	Clinical case work	Anytime	C; 1 wk.	100
44 P 01379	Weekly Surgical Conference [387]	Memorial Hospital 23rd and Evans, Cheyenne, Wyo.	R	B	52	Clinical case work Lecture or panel	Every Saturday	I; 1 hr. weekly for 1 wk. Saturdays	Nil
44 P 04420	Refresher Course for General Practitioners [52]	Vancouver General Hospital Vancouver, British Columbia, Canada	R	G	18	Lecture or panel Theatre clinics	2/ 6/56	C; 3 days	15

45. THORACIC SURGERY

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
45 P 01103	Thoracic Surgery [64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	B	8	Lecture or panel	4/18/56	I; 2 hr. weekly for 4 wk. Wednesdays	30
45 P 01564	Thoracic Surgery [18, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Laboratory work Clinical case work	10/ 3/55	C; 1 wk.	125
45 P 01494	Surgical Aspects of Pulmonary Disease	American College of Surgeons (Clinical Congress) 40 E. Erie St., Chicago 11	R	S	12	Lecture or panel	10/31/55	I; 3 hr. daily for 4 days	5
45 P 01565	Thoracic Surgery [18, 5]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	30	Laboratory work Clinical case work	6/ 4/56	C; 1 wk.	125
45 P 03105	Thoracic Surgery	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	12	Laboratory work Clinical case work	Arranged	Specially arranged	200
45 P 02954	Diseases of the Chest DM1027	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	B	Unknown	Demonstration	Anytime	Specially arranged	100
45 P 03006	Thoracic Surgery DS1056 [8]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	S	S	Unknown	Small group discussion Lecture or panel	Anytime	Specially arranged	375
45 P 03674	The Prevention and Management of Cardiac Arrest [171, 58, 5, 172]	Western Reserve University School of Medicine 2109 Adelbert Road, Cleveland	S	B	10½	Operative surgery	9/23/55	C; 1½ days	20 and 40
45 P 03676	The Prevention and Management of Cardiac Arrest [171, 58]	Western Reserve University School of Medicine 2109 Adelbert Rd., Cleveland	S	B	10½	Operative surgery	9/23/55	C; 1½ days	20 and 40

46. TRAUMATOLOGY

46 P 01565	Surgery in Acute Trauma [5]	Letterman Army Hospital San Francisco	R	B	40	Clinical case work Lecture or panel	4/ 2/56	C; 5 days	Nil
46 P 01563	Surgery in Acute Trauma [5]	Fitzsimons Army Hospital Denver 8	R	B	40	Clinical case work Lecture or panel	4/ 2/56	C; 5 days	Nil
46 P 01564	Surgery in Acute Trauma [5]	Walter Reed Army Medical Center Washington 12, D. C.	R	B	40	Clinical case work Lecture or panel	4/ 2/56	C; 5 days	Nil
46 P 01826	Trauma and Fractures Conference [225]	State University of Iowa College of Medicine Iowa City	R	B	11	Lecture or panel Demonstration	9/16/55	C; 1½ days	15
46 P 03988	Symposium on Trauma [204]	Four centers in eastern Oregon to be selected	S	G	5	Laboratory work Clinical case work	3/56	C; 1 day	Nil
46 P 01561	Surgery in Acute Trauma [5]	Valley Forge Army Hospital Phoenixville, Pa.	R	B	24	Clinical case work Lecture or panel	4/ 2/56	C; 3 days	Nil
46 P 01486	Surgery in Acute Trauma [5]	Brooke Army Hospital Fort Sam Houston, Texas	R	B	40	Clinical case work	4/ 2/56	C; 5 days	Nil
46 P 01566	Surgery in Acute Trauma [5]	William Beaumont Army Hospital Fort Bliss, Texas	R	B	40	Clinical case work Lecture or panel	4/ 2/56	C; 5 days	Nil
46 P 01562	Surgery in Acute Trauma [5]	Madigan Army Hospital Tacoma, Wash.	R	B	40	Clinical case work Lecture or panel	4/ 2/56	C; 5 days	Nil
46 P 01560	Surgery in Acute Trauma [5]	Tripler Army Hospital Honolulu, Hawaii	R	B	40	Clinical case work Lecture or panel	4/ 2/56	C; 5 days	Nil

47. TROPICAL MEDICINE

47 P 03378	735-A Tropical Medicine [173]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	215	Laboratory work Lecture or panel	Unknown	C; 7 wk.	300
47 P 02952	Parasitology DB1036	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Laboratory work Small group discussion	Anytime	C; 3 wk.	75

48. UROLOGY

48 P 01095	General Urology [64]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	R	G	13½	Lecture or panel	1/ 4/56	I; 1½ hr. weekly for 9 wk. Wednesdays	35
48 P 01633	Urology [5, 195]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	S	80	Laboratory work Clinical case work	10/10/55	C; 2 wk.	225
48 P 01634	Urology [5, 195]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	R	B	80	Laboratory work Clinical case work	4/16/56	C; 2 wk.	225
48 P 01824	Urology Postgraduate Course [207]	State University of Iowa College of Medicine University Hospital Iowa City	R	B	10	Clinical case work Lecture or panel	3/30/56	C; 1½ days	15
48 P 02281	Postgraduate Course in Urology—North Central Section of American Urological Association [219]	Mayo Clinic Rochester, Minn.	R	S	24	Small group discussion Lecture or panel	12/ 1/55	C; 3 days	80
48 P 03147	Instrumental Urology	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	S	B	24	Laboratory work Clinical case work	Arranged	Specially arranged	100
48 P 03149	Urological Surgery	New York Polyclinic Medical School and Hospital 315 W. 50th St., New York 19	S	S	80	Laboratory work Operative surgery	Arranged	Specially arranged	150
48 P 02820	Postgraduate Course in Urology [174]	St. Clare's Hospital 415 W. 51st St., New York 19	S	S	1 yr.	Unknown	Anytime	Specially arranged	750
48 P 03396	671-A Refresher Course in Basic Urology [117]	New York University Post-Graduate Medical School 550 First Ave., New York	R	B	35	Laboratory work Lecture or panel	1/16/56	C; 1 wk.	60
48 P 03395	671-A Advanced Course in Urology [92]	New York University Post-Graduate Medical School 550 First Ave., New York	S	S	110	Laboratory work Clinical case work	4/ 2/56	C; 4 wk.	175
48 P 01569	Kimbrough Urological Seminar [5, 175]	Brooke Army Hospital Fort Sam Houston, Texas	R	B	20	Lecture or panel	9/22/55	C; 2½ days	Nil
48 P 01170	Clinical Urology [13, 200]	The University of Texas Postgraduate School of Medicine, Temple Division, Scott and White (Clinic) Hospitals Temple, Texas	R	G	88	Clinical case work	Arranged	Specially arranged	25

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
			49. OTHER						
49 P 01202	Medicine for General Practitioners [5, 84]	East Oakland Hospital 2648 E. 14th St., Oakland, Calif.	R	G	24	Lecture or panel Small group discussion	9/20/55	I; 2 hr. weekly for 12 wk. Tuesdays	50
49 P 01143	Course in Poliomyelitis [5, 52]	Orthopedic Hospital 2400 S. Flower St., Los Angeles 7 and Rancho Los Amigos Respiratory Center for Poliomyelitis Hondo, Calif.	S	B	44	Lecture or panel	9/26/55	C; 5 days	15
49 P 01205	Applied Therapeutics [84]	University of California Extension 540 Powell St., San Francisco 22	R	B	30	Lecture or panel Demonstration	10/17/55	C; 3 days	To be announced
49 P 01154	Postgraduate Breakfast Study Club [33]	Saint Joseph Hospital 501 S. Buena Vista, Burbank, Calif.	R	B	40	Small group discussion Lecture or panel	1/12/56	I; 1 hr. weekly for 40 wk. Wednesdays	Nil
49 P 01144	Course in Poliomyelitis [5, 52]	Orthopedic Hospital 2400 S. Flower St., Los Angeles 7 and Rancho Los Amigos Respiratory Center for Poliomyelitis Hondo, Calif.	S	B	44	Lecture or panel	4/30/56	C; 5 days	15
49 P 02611	Neuroroentgenology [116]	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	10	Lecture or panel	9/26/55	I; 2 hr. weekly for 5 wk. Mondays	Nil
49 P 01271	Neuropathology [116]	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	20	Laboratory work Lecture or panel	9/28/55	I; 2½ hr. weekly for 8 wk. Wednesdays	Nil
49 P 02613	Neuroanatomy [116]	Yale University School of Medicine 333 Cedar St., New Haven, Conn. and Connecticut State Hospital Middletown, Conn.	S	S	27	Laboratory work Lecture or panel	9/28/55	I; 2½ hr. weekly for 11 wk. Wednesdays	Nil
49 P 01276	Connecticut Clinical Congress [176]	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	R	B	36	Clinical case work Small group discussion	9/55	C; 2 days	3
49 P 02612	Electroencephalography [116]	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	6	Lecture or panel	10/31/55	I; 2 hr. weekly for 3 wk. Mondays	Nil
49 P 01274	Child Psychiatry [116]	Yale University School of Medicine 333 Cedar St., New Haven, Conn	S	S	18	Lecture or panel	3/12/56	I; 3 hr. weekly for 6 wk. Mondays	Nil
49 P 01275	Pediatric Neurology [116]	Yale University School of Medicine 333 Cedar St., New Haven, Conn.	S	S	36	Lecture or panel	4/23/56	I; 12 hr. weekly for 3 wk. Mondays	Nil
49 P 01298	Yale Summer School of Alcohol Studies [5]	Yale University Center of Alcohol Studies 52 Hillhouse Ave., New Haven, Conn.	S	B	75	Small group discussion Lecture or panel	7/ 2/56	C; 4 wk.	250
49 P 01333	Fifth Midwinter Seminar	The Medical Society of D. C. Auditorium 1718 M St., N. W., Washington, D. C.	R	B	6	Lecture or panel	2/56	C; 3 days	Nil
49 P 01832	Recent Advances in the Treatment of Thyroid Diseases [30]	State University of Iowa College of Medicine Iowa City	R	B	6	Lecture or panel	10/13/55	C; 1 day	10
49 P 02077	Massachusetts Medical Society—Semi-Annual Meetings	Hotel Statler Boston	R	G	7	Unknown	Arranged	Specially arranged	Nil
49 P 02242	Nutrition [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	33	Lecture or panel	3/56	I; 1 hr. weekly for 11 wk.	35
49 P 02174	Clinical Use of Radioactive Isotopes	Dept. of Postgraduate Medicine, University of Michigan Medical School University Hospital Ann Arbor, Mich.	S	B	Unknown	Laboratory work Clinical case work	Specially arranged	Specially arranged	50 weekly
49 P 02215	Physiological Chemistry Seminar	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	11	Small group discussion	Unknown	I; 1 hr. weekly for 11 wk.	15
49 P 02223	Cancer Detection Clinic [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	G	22	Clinical case work	Unknown	I; 2 hr. weekly for 11 wk.	25
49 P 02229	Biochemical Applications of Radioactive Isotopes [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	44	Laboratory work Lecture or panel	Unknown	I; 4 hr. weekly for 11 wk.	30
49 P 02230	Intermediary Metabolism [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
49 P 02243	Quantitative Methods and Metabolism [16]	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	176	Laboratory work Lecture or panel	Unknown	I; 16 hr. weekly for 11 wk.	50

49 P 02214	Survey of Medical Chemistry	Wayne University College of Medicine 1401 Rivard, Detroit	R	B	11	Lecture or panel	Unknown	I; 1 hr. weekly for 11 wk.	15
49 P 02317	Clinical Chemistry for General Physicians[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	16	Laboratory work Small group discussion	10/ 6/55	C; 3 days	25
49 P 02312	Mental Deficiency for General Physicians, Pediatricians, and Child Psychiatrists[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	B	10	Lecture or panel	2/ 2/56	C; 3 days	25
49 P 02323	Electrocardiography for General Physicians[33, 5]	University of Minnesota Center for Continuation Study Minneapolis 14	R	G	35	Small group discussion Interpretation of electrocardiograms	5/ 7/56	C; 1 wk.	40
49 P 01779	Medical Writing and Editing[73, 74]	Hotel Jefferson St. Louis	S	B	9	Lecture or panel Demonstration	9/30/55	C; 2 days	5
49 P 02365	Homer G. Phillips Hospital Internes Alumni Association Course[5]	Homer G. Phillips Hospital 2601 N. Whittier, St. Louis 13	R	B	41	Small group discussion Lecture or panel	4/56	Specially arranged	Nil
49 P 01505	Two-Way Radio Conferences—Albany Medical College to Area Hospitals	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	30	Discussion of special topics by radio	10/ 5/55	I; 1 hr. weekly for 36 wk. Wednesdays	Nil
49 P 02626	Cerebral Palsy—PM 1	Columbia Presbyterian Medical Center 630 W. 168th St., New York 32	R	G	83	Clinical case work Small group discussion	10/10/55	C; 3 wk.	100
49 P 03822	Current Concepts of Rheumatic Diseases and Their Management[240, 5, 241]	Cornell University Medical College and Hospital for Special Surgery New York	S	S	40	Lecture or panel	10/31/55	C; 5 days	30 to members
49 P 02819	Med PM 71—Diseases of the Chest[26]	Montefiore Hospital East Gun Hill Road, New York 67	R	B	52	Laboratory work Clinical case work Small group discussion	1/ 6/56	I; 2½ hr. weekly for 20 wk. Fridays	100
49 P 02901	Growth and Development of Personality from Infancy Through Adolescence	Department of Health 125 Worth St., New York	S	B	18	Lecture or panel	2/56	I; 1½ hr. weekly for 12 wk. Thursdays or Fridays	Nil
49 P 02621	Cerebral Palsy—PM 1	Columbia Presbyterian Medical Center 630 W. 168th St., New York 32	R	G	83	Clinical case work Small group discussion	4/16/56	C; 3 wk.	100
49 P 03106	Vascular Surgery	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	16	Laboratory work Clinical case work	Arranged	Specially arranged for 1 wk.	200
49 P 03108	Arthritis	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	G	8	Laboratory work Clinical case work	Arranged	Specially arranged	50
49 P 03119	Advanced Otology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	26	Laboratory work Clinical case work	Arranged	Specially arranged	250
49 P 03123	Seminar in Ophthalmology and Otolaryngology	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	R	B	40	Laboratory work Small group discussion	Arranged	Specially arranged	50
49 P 03128	Bronchoscopy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	8	Laboratory work Clinical case work	Arranged	Specially arranged	150
49 P 03110	Diagnosis and Treatment of Diseases of the Heart	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	G	15	Laboratory work Clinical case work	Arranged	Specially arranged	75
49 P 03155	Practical Course in Superficial and Deep X-Ray Therapy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	40	Laboratory work Clinical case work	Arranged	Specially arranged for 4 wk.	100
49 P 03156	Advanced Course in Radiotherapy	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	S	40	Laboratory work Clinical case work	Arranged	Specially arranged	100
49 P 03161	Traumatic Surgery Including General Surgery, Orthopedic Surgery and Physical Medicine	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	S	B	320	Laboratory work Clinical case work	Arranged	Specially arranged	200
49 P 01502	Clinical Refresher Course	Albany Medical College 47 New Scotland Ave., Albany, N. Y.	R	B	As desired	Course individually arranged	Individually arranged	Specially arranged	60 for each 5 days
49 P 02950	Immunology DB1026	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	R	G	Unknown	Laboratory work Small group discussion	Anytime	C; 3 wk.	50
49 P 03311	5611-A Special Observation Course[13]	New York University Post-Graduate Medical School 550 First Ave., New York	S	B	140	Observation	Unknown	C; 4 wk.	100

References will be found on pages 1129-1131.

Postgraduate Continuation Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		49. OTHER—Continued							
49 P 03638	Pain from the Standpoint of Pathology, Physiology and Pharmacology [202]	Academy of Medicine of Cleveland and Cuyahoga County 2009 Adelbert Rd., Cleveland 6	S	B	3	Lecture or panel	4/20/56	C; 1 day	Nil
49 P 03757	Oklahoma City Clinical Society [177, 178, 5, 179]	Biltmore Hotel Grand and Harvey avenues, Oklahoma City	R	B	30	Lecture and panel	10/24/55	C; 4 days	20
49 P 03907	Advances in Medicine and Surgery [188, 189]	Graduate School of Medicine, University of Pennsylvania Philadelphia	R	B	40	Small group discussion Lecture or panel	9/19/55	C; 1 wk.	100
49 P 03843	Arthritis, Rheumatology and Allied Diseases [34, 5]	Albert Einstein Medical Center, Northern Division York and Tabor roads, Philadelphia 41	R	G	30	Clinical case work Lecture or panel	Fall, 1955	I; 3 hr. weekly for 10 wk. Wednesdays	50
49 P 03847	Postgraduate Hospital Training Course [110, 5]	Albert Einstein Medical Center, Northern Division York and Tabor roads, Philadelphia 41	R	G	487½	Clinical case work Lecture or panel	Fall, 1955	C; 15 wk.	50
49 P 03881	Postgraduate Institute Philadelphia County Medical Society [206]	Philadelphia County Medical Society Bellevue-Stratford Hotel, Philadelphia	R	B	21	Lecture or panel	4/10/56	C; 4 days	10
49 P 03908	Applied Aspects of Calcium and Phosphorus Metabolism [95]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	16	Lecture or panel	5/23/56	C; 2 days	40
49 P 03917	Ionic (Acid Base) Balance and Water Balance with Clinical Applications [95]	Graduate School of Medicine, University of Pennsylvania Philadelphia	R	B	21	Small group discussion Lecture or panel	5/25/56	C; 3 days	60
49 P 03918	Modern Viewpoints in Carbohydrate and Fat Metabolism with Clinical Applications [95]	Graduate School of Medicine, University of Pennsylvania Philadelphia	S	B	16	Small group discussion Lecture or panel	6/ 6/56	C; 2 days	40
49 P 03916	Electroencephalography [13, 190]	The Institute 111 N. 49th St., Philadelphia	S	B	80	Small group discussion Lecture or panel	By arrangement	C; 2 wk.	200
49 P 03984	Protective Body Mechanics in Arthritis [91, 5, 309]	D. T. Watson Hospital School Leetsdale, Pa.	S	B	40	Clinical case work Small group discussion	Unknown	I; 8 hr. weekly for 5 wk. Thursdays	20
49 P 03985	Evaluation and Treatment of Cerebral Palsy [91, 5, 306]	D. T. Watson Hospital School Leetsdale, Pa.	S	B	80	Clinical case work Small group discussion	Unknown	I; 8 hr. weekly for 10 wk. Tuesdays	20
49 P 03986	Management of Early Poliomyelitis [18, 5, 309]	D. T. Watson Hospital School Leetsdale, Pa.	S	B	40	Clinical case work Small group discussion	Unknown	C; 5 days	20
49 P 04027	Basic Course in Techniques of Using Radioisotopes [259, 5]	Oak Ridge Institute of Nuclear Studies P. O. Box 117, Oak Ridge, Tenn.	S	B	95	Laboratory work Lecture or panel	10/17/55	C; 4 wk.	25
49 P 02466	Basic Course in Techniques of Using Radioisotopes [259, 5]	Oak Ridge Institute of Nuclear Studies P. O. Box 117, Oak Ridge, Tenn.	S	B	95	Laboratory work Lecture or panel	1/ 9/56	C; 4 wk.	25
49 P 04113	Basic Course in Techniques of Using Radioisotopes [259, 5]	Oak Ridge Institute of Nuclear Studies P. O. Box 117, Oak Ridge, Tenn.	S	B	95	Laboratory work Lecture or panel	2/27/56	C; 4 wk.	25
49 P 04111	Basic Course in Techniques of Using Radioisotopes [259, 5]	Oak Ridge Institute of Nuclear Studies P. O. Box 117, Oak Ridge, Tenn.	S	B	95	Laboratory work Lecture or panel	4/16/56	C; 4 wk.	25
49 P 02467	Basic Course in Techniques of Using Radioisotopes [259, 5]	Oak Ridge Institute of Nuclear Studies P. O. Box 117, Oak Ridge, Tenn.	S	B	95	Laboratory work Lecture or panel	6/56	C; 4 wk.	25
49 P 04112	Basic Course in Techniques of Using Radioisotopes [259, 5]	Oak Ridge Institute of Nuclear Studies P. O. Box 117, Oak Ridge, Tenn.	S	B	95	Laboratory work Lecture or panel	7/56	C; 4 wk.	25
49 P 01512	Basic Course in Techniques of Using Radioisotopes [259, 5]	Oak Ridge Institute of Nuclear Studies P. O. Box 117, Oak Ridge, Tenn.	S	B	95	Laboratory work Lecture or panel	8/56	C; 4 wk.	25
49 P 04187	Rheumatic and Collagen Diseases [228, 206]	The University of Texas Postgraduate School of Medicine, San Antonio Division, Robert B. Green Hospital San Antonio, Texas	R	B	8	Small group discussion Lecture or panel	9/28/55	I; 2 hr. weekly for 4 wk. Wednesdays	15
49 P 04163	Radiophysics [150, 16]	The University of Texas Postgraduate School of Medicine, Texas Medical Center Houston, Texas	R	B	24	Lecture or panel	10/55	I; 1 hr. weekly for 24 wk. Thursdays	10

		graduate School of Medicine, El Paso Division El Paso, Texas	R	B	8	Lecture or panel	10/55	C; 1 day	10
49 P 04191	To be announced [40, 200]	The University of Texas Post-graduate School of Medicine, El Paso Division El Paso, Texas	R	B	8	Lecture or panel	12/55	C; 1 day	10
49 P 04447	Demonstration of Clinical Management of Poliomyelitis [125, 381]	The Texas Medical Center Houston, Texas	S	B	24	Small group discussion	2/27/56	C; 4 days	8.50
49 P 04195	To be announced [40, 200]	The University of Texas Post-graduate School of Medicine, El Paso Division, Turner Home El Paso, Texas	R	B	8	Lecture or panel	2/56	C; 1 day	10
49 P 04179	Radiotherapy	The University of Texas Post-graduate School of Medicine, Texas Medical Center Houston, Texas	R	B	13	Lecture or panel	3/56	I; 1 hr. weekly for 13 wk. Mondays	25
49 P 04196	To be announced [40, 200]	The University of Texas Post-graduate School of Medicine, El Paso Division, Turner Home El Paso, Texas	R	B	8	Lecture or panel	4/56	C; 1 day	10
49 P 04197	To be announced [40, 200]	The University of Texas Post-graduate School of Medicine, El Paso Division, Turner Home El Paso, Texas	R	B	8	Lecture or panel	6/56	C; 1 day	10

P—Postgraduate Courses: R—refresher; S—special. Designed for: G—general practitioners; S—specialists; B—both general practitioners and specialists. Time Arrangements: C—concentrated, full-time; I—intermittent.

G—Graduate Courses: C—clinical work; B—basic sciences; B—both. Designed for: G—general practitioners; S—specialists; B—both general practitioners and specialists. Time Arrangements: C—concentrated, full-time; I—intermittent.

B. GRADUATE COURSES

Type	Designed for	Time Arrangements
C—Clinical	G—General Practitioners	C—Concentrated, full-time
S—Basic Science	S—Specialists	I —Intermittent
B—Both	B—All Physicians	

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		1. ADMINISTRATIVE MEDICINE							
1 G 428	Hospital Administration [423, 124, 10, 108]	Columbia University School of Public Health and Administrative Medicine 600 W. 168th St., New York 32	B	B	20 mo.	Laboratory work Small group discussion	9/29/55	C; 20 mo.	1,045
1 G 129	Administrative Medicine [423, 124, 10, 152]	Columbia University School of Public Health and Administrative Medicine 600 W. 168th St., New York 32	B	B	20 mo.	Laboratory work Small group discussion	9/29/55	C; 20 mo.	1,045
1 G 792	Medical and Hospital Administration [113, 311, 10, 6, 340]	Graduate School of Public Health, University of Pittsburgh Pittsburgh 13	B & C	B	2 yr.	Laboratory work Small group discussion	9/20/55	C; 21 mo.	800
		3. ANESTHESIOLOGY							
3 G 063	892: Anesthesia [350, 357, 182]	Los Angeles County Hospital 1200 N. State St., Los Angeles 33	B & C	B	384	Clinical case work Small group discussion	Arranged	C; 12 wk.	300
3 G 515	513-A Anesthesiology (Graduate Course) [21, 10, 320, 5, 113]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1600	Laboratory work Clinical case work	9/ 6/55	C; 12 mo.	815
3 G 172	Basic Science in Anesthesiology [113, 123, 340, 10]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York 29	B & C	B	8 mo.	Laboratory work Clinical case work	10/10/55	C; 8 mo.	710
3 G 781	Basic Sciences Related to Anesthesiology [113, 52]	University of Pittsburgh School of Medicine 3941 O'Hara St. (Oakland), Pittsburgh 13	B	B	34	Laboratory work Lectures and panels	6/56	Specially arranged	25
		4. ANATOMY							
4 G 785	Surgical Anatomy [113, 10, 57]	University of Pittsburgh School of Medicine 3941 O'Hara St. (Oakland) Pittsburgh 13	B	B	180	Laboratory work Lectures and panels	10/55	Specially arranged	25

References will be found on pages 1129-1131.

Graduate Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		7. CARDIOVASCULAR DISEASE							
7 G 069	S32: Cardiology and Vascular Disease [338, 357, 5, 143, 182]	Los Angeles County Hospital 1200 N. State St., Los Angeles 33	B & C	B	1664	Laboratory work Clinical case work	7/55	C; 12 mo.	1000
7 G 074	Electrocardiography [143, 5, 349, 428, 52]	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	B & C	B	28	Lectures and panels	9/20/55	C; 12 wk.	79
7 G 501	Electrocardiography [143, 5, 340, 428, 52, 38]	Denver General Hospital Denver	B & C	B	28	Lectures and panels	1/15/56	C; 12 wk.	79
7 G 230	Cardiovascular Disease [310, 143, 5, 331, 130, 16]	Massachusetts General Hospital Fruit Street, Boston	B & C	B	Unknown	Laboratory work Clinical case work	10/ 3/55	Specially arranged for 12 mo.	800
7 G 231	Cardiology 1 [310, 113, 331, 16, 28]	Beth Israel Hospital 330 Brookline Ave., Boston	B & C	B	Unknown	Laboratory work Clinical case work	1/30/56	Specially arranged for 3 mo.	500
7 G 688	Basic Course in Electrocardiography [173]	University of Oklahoma School of Medicine 800 N. E. 13th St., Oklahoma City	B	B	44	Laboratory work Small group discussion	3/ 5/56	C; 1 wk.	75
7 G 749	Cardiology [320, 16, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
		8. DERMATOLOGY							
8 G 120	Course 3—Dermatology [5, 329, 205]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	C	B	1500	Laboratory work Clinical case work	By appointment	C; 12 mo.	1000
8 G 232	Dermatology and Syphilology [310, 143, 5, 331, 87, 16]	Massachusetts General Hospital Fruit Street, Boston	B & C	B	Unknown	Laboratory work Clinical case work	10/ 3/55	Specially arranged for 12 mo.	800
8 G 819	525-B Dermatology and Syphilology (Graduate Course) [143, 5, 418, 16, 417]	New York University Post-Graduate Medical School 550 First Ave., New York	C	B	1500	Laboratory work Clinical case work	10/ 1/55	C; 12 mo.	400
8 G 820	525-C Dermatology and Syphilology (Graduate Course) [143, 5, 110, 16]	New York University Post-Graduate Medical School 550 First Ave., New York	C	B	1500	Laboratory work Clinical case work	10/ 1/55	C; 12 mo.	200
8 G 969	525-A Dermatology and Syphilology (Graduate Course) [143, 5, 329, 16, 117]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1500	Laboratory work Clinical case work	10/ 1/55	C; 12 mo.	815
8 G 915	Dermatology and Syphilology [348, 320, 5, 113]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	B & C	B	7728	Laboratory work Clinical case work	10/ 3/55	C; full time for 3 yr.	500
8 G 914	Dermatology and Syphilology [348, 320, 5, 143]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	B & C	B	7728	Laboratory work Clinical case work	4/ 1/56	C; full time for 3 yr.	500
8 G 516	525-A Dermatology and Syphilology (Graduate Course) [143, 5, 329, 16, 417]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1500	Laboratory work Clinical case work	7/ 1/56	C; 12 mo.	815
8 G 517	525-B Dermatology and Syphilology (Graduate Course) [143, 5, 418, 16, 417]	New York University Post-Graduate Medical School 550 First Ave., New York	C	B	1500	Laboratory work Clinical case work	7/ 1/56	C; 12 mo.	400
8 G 518	525-C Dermatology and Syphilology (Graduate Course) [143, 5, 410, 16]	New York University Post-Graduate Medical School 550 First Ave., New York	C	B	1500	Laboratory work Clinical case work	7/ 1/56	C; 12 mo.	200
8 G 408	Dermatology GM 1-A—Advanced Dermatology [128, 143, 330]	Columbia-Presbyterian Medical Center 630 W. 168th St., New York	B & C	S	Arranged	Laboratory work Clinical case work	Arranged	Specially arranged for 6 or 12 mo.	300 for 6 mo.
8 G 407	Dermatology GM 1—Clinical Dermatology [330, 143]	Columbia-Presbyterian Medical Center 630 W. 168th St., New York	B & C	S	Arranged	Laboratory work Clinical case work	Arranged	Specially arranged for 6 or 12 mo.	300
8 G 750	Dermatology [371, 16, 329, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
		9. ENDOCRINOLOGY							
9 G 076	Endocrinology [143, 5, 349, 428]	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	B	B	24	Lectures and panels	2/56	C; 12 wk.	Varies
		11. FORENSIC MEDICINE							
11 G 520	531-A Forensic Medicine (Graduate Course) [16, 5, 329, 113]	New York University Post-Graduate Medical School 550 First Ave., New York	B	B	1260	Laboratory work Small group discussion	9/26/55	C; 9 mo.	815

13. GASTROENTEROLOGY

13 G 751	Gastroenterology [18, 16, 329, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
13 G 068	814: Gastroenterology [122, 357, 182, 143, 5]	Los Angeles County Hospital 1200 N. State St., Los Angeles 33	B & C	B	1664	Laboratory work Clinical case work	9/55	C; 12 mo.	1000
13 G 067	851: Gastrointestinal Endoscopy [107, 357, 5, 182]	Los Angeles County Hospital 1200 N. State St., Los Angeles 33	B & C	B	832	Laboratory work Clinical case work	Arranged	C; 6 mo.	500

14. GENERAL MEDICINE

14 G 078	Applied Medical Science [143, 5, 340, 16, 430, 431]	Fitzsimons General Hospital Denver	B	S	56	Small group discussion Lectures and panels	9/ 5/55	C; 25 wk.	Varies
14 G 075	Gastrointestinal Physiology, Disease [143, 5, 340, 428]	University of Colorado School of Medicine 4200 E. Ninth Ave., Denver 20	B	S	28	Lectures and panels	3/56	C; 14 wk.	Varies
14 G 274	General Medicine [143, 329, 52]	The Department of Postgraduate Medicine, University of Michigan Medical School University Hospital, Ann Arbor, Mich.	B	B	850	Laboratory work Clinical case work	10/ 3/55	C; 9 mo.	500
14 G 718	Basic Medical Sciences [206, 16, 329, 5]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B	B	1280	Laboratory work Small group discussion	9/26/55	C; 8 mo.	1000
14 G 911	Postgraduate Course in Medicine [5, 435, 58]	Montreal General Hospital and Royal Victoria Hospital 687 Pine Ave., West, Montreal, Canada	B & C	S	180	Clinical case work Small group discussion	7/ 1/56	I; 5 hr. daily, 6 days wk. for 6 wk.	225
14 G 900	Master of Science in Medicine [16, 423, 340]	Queen's University, Faculty of Medicine Kingston, Ontario, Canada	B	B	1 yr.	Laboratory work Lectures and panels	9/12/56	C; 10 mo.	200
14 G 166	Bachelor of Science (Medicine) [102, 16, 377, 391]	University of Toronto Toronto, Canada	B	B	Specially arranged	Laboratory work Small group discussion	7/ 1/56	Specially arranged	205
14 G 901	Advanced Graduate Course in Medicine [340, 34]	Faculty of Medicine, University of Toronto Toronto, Canada	B & C	B	210	Small group discussion Lecture and panel	8/22/56	C; 6 wk.	200

16. GYNECOLOGY

16 G 939	Postgraduate Anatomy, Obstetrics and Gynecology [414, 415]	University of Alabama Medical Center 1919 Seventh Ave., South, Birmingham 3, Ala.	B	S	128	Laboratory work Small group discussion	9/20/55	Specially arranged for 36 wk.	Unknown
16 G 171	Basic Science in Obstetrics and Gynecology [143, 423, 340, 16]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York 29	B & C	B	8 mo.	Clinical case work Small group discussion	10/10/55	C; 8 mo.	710
16 G 752	Gynecology-Obstetrics [370, 16, 329, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
16 G 912	Post-Graduate Course in Obstetrics and Gynecology [5, 130, 100]	Royal Victoria, Montreal Maternity Hospital 687 Pine Ave., West., Montreal 2, Canada	B & C	S	180	Small group discussion Lectures and panels	8/15/56	I; 5 hr. daily, 6 days wk. for 6 wk.	225
16 G 904	Advanced Graduate Course in Gynecology [340, 34]	Faculty of Medicine, University of Toronto Toronto, Canada	B & C	B	240	Small group discussion Lecture and panel	8/22/56	C; 6 wk.	200

18. INDUSTRIAL MEDICINE

18 G 250	Industrial Health [16, 102, 349]	Harvard University School of Public Health 55 Shattuck St., Boston	B	B	2 mo.	Lectures and panels Demonstrations	2/ 6/56	C; 2 mo.	300
18 G 935	Industrial Medicine [336, 337, 338, 16, 143]	University of Rochester School of Medicine and Dentistry 260 Crittenden Blvd., Rochester 20, N. Y.	B & C	B	60	Laboratory work Small group discussion	9/19/55	C; 16 mo.	Unknown
18 G 519	481-A Industrial Medicine (Graduate Course) [100, 16, 5, 143]	New York University Post-Graduate Medical School 550 First Ave., New York	C	B	960	Laboratory work Clinical case work	9/26/55	C; 12 mo.	815
18 G 658	Industrial Medicine [143, 5, 333, 16, 100]	Institute of Industrial Health, College of Medicine, University of Cincinnati Cincinnati	B & C	B	1600	Laboratory work Clinical case work	7/ 5/56	C; 12 mo.	400
18 G 659	Industrial Medicine [143, 334, 335, 16, 100]	Institute of Industrial Health, College of Medicine, University of Cincinnati Cincinnati	B & C	B	2880	Laboratory work Clinical case work	7/ 5/56	C; 36 mo.	Fellowship stipend
18 G 789	Occupational Health [143, 313, 320, 16, 344]	Graduate School of Public Health, University of Pittsburgh Pittsburgh 13	B & C	B	3 yr.	Laboratory work Clinical case work	9/20/55	C; 34 mo.	700 per yr.

References will be found on pages 1129-1131.

Graduate Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
18. INDUSTRIAL MEDICINE—Continued									
18 G 790	Occupational Health [143, 341, 329, 16, 183]	Graduate School of Public Health, University of Pittsburgh, Pittsburgh 13	B	B	10 mo.	Laboratory work Small group discussion	9/20/55	C; 10 mo.	700
18 G 468	Industrial Hygiene [440, 441, 16, 426]	University of Toronto, Toronto 5, Canada	B & C	B	960	Laboratory work Small group discussion	9/19/55	C; 32 wk.	425
20. INTERNAL MEDICINE									
20 G 070	830: Internal Medicine [216, 16, 357, 5, 143, 182]	Los Angeles County Hospital, 1200 N. State St., Los Angeles 33	B & C	B	1661	Clinical case work Small group discussion	9/55	C; 12 mo.	1000
20 G 077	Radiology Physics and Medical Use of Isotopes [143, 5, 349, 16, 429]	University of Colorado, School of Medicine, 4200 E. Ninth Ave., Denver 20	B	S	56	Laboratory work Small group discussion	9/55	C; 28 wk.	Varies
20 G 080	Fluid and Electrolyte Balance [143, 5, 349, 428]	University of Colorado, School of Medicine, 4200 E. Ninth Ave., Denver 20	B	B	32	Lectures and panel	9/55	C; 16 wk.	79
20 G 229	Internal Medicine 1 [310, 143, 5, 331, 16, 332]	Boston City Hospital, 818 Harrison Ave., Boston	B & C	B	Unknown	Laboratory work Clinical case work	9/ 1/55	Specially arranged for 12 mo.	800
20 G 803	5429-A Internal Medicine (Graduate Course) [143, 5, 329, 16, 34]	New York University Post-Graduate Medical School, 550 First Ave., New York	B & C	B	1100	Clinical case work Small group discussion	9/26/55	C; 12 mo.	815
20 G 471	Basic Science in Internal Medicine [143, 423, 349, 16]	New York Medical College, Flower and Fifth Avenue Hospitals, 1 E. 105th St., New York 29	B & C	B	8 mo.	Laboratory work Clinical case work	10/10/55	C; 8 mo.	710
20 G 521	5429-A Internal Medicine (Graduate Course) [143, 5, 329, 16, 34]	New York University Post-Graduate Medical School, 550 First Ave., New York	B & C	B	1100	Clinical case work Small group discussion	7/ 1/56	C; 12 mo.	815
20 G 753	Internal Medicine [360, 329, 5, 143, 16]	Graduate School of Medicine, University of Pennsylvania, Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
21. MALIGNANT DISEASE									
21 G 001	Newer Developments in Cancer Diagnosis and Treatment [5, 226]	City of Hope Medical Center, Duarte, Calif.	C	B	35	Small group discussion Lectures and panels	10/24/55	C; 1 wk.	75
23. NEUROLOGY									
23 G 527	645-A Neurology (Graduate Course) [143, 5, 329, 16]	New York University Post-Graduate Medical School, 550 First Ave., New York	B & C	B	1820	Laboratory work Clinical case work	9/12/55	C; 9 mo.	800
23 G 062	645-A Neurology (Graduate Course) [143, 5, 329, 16]	New York University Post-Graduate Medical School, 550 First Ave., New York	B & C	B	1820	Laboratory work Clinical case work	7/ 1/56	C; 9 mo.	800
23 G 456	Neurology PM 62—Review of Neurology [372]	Montefiore Hospital, East Gun Hill Road, New York 67	B & C	B	72	Clinical case work Small group discussion	9/14/55	I; 3 hr. twice weekly for 13 wk. Tuesdays and Wednesdays	150
23 G 739	Neurology-Psychiatry [368, 329, 5, 113, 16]	Graduate School of Medicine, University of Pennsylvania, Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
26. OBSTETRICS									
26 G 939	Postgraduate Anatomy, Obstetrics and Gynecology [414, 415]	University of Alabama Medical Center, 1919 Seventh Ave., South, Birmingham 3, Ala.	B	S	128	Laboratory work Small group discussion	9/20/55	Specially arranged for 36 wk.	Unknown
26 G 474	Basic Science in Obstetrics and Gynecology [143, 423, 349, 16]	New York Medical College, Flower and Fifth Avenue Hospitals, 1 E. 105th St., New York 29	B & C	B	8 mo.	Clinical case work Small group discussion	10/10/55	C; 8 mo.	710
26 G 752	Gynecology-Obstetrics [370, 16, 329, 5, 143]	Graduate School of Medicine, University of Pennsylvania, Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
26 G 912	Post-Graduate Course in Obstetrics and Gynecology [5, 436, 169]	Royal Victoria, Montreal Maternity Hospital, 687 Pine Ave., West, Montreal 2, Canada	B & C	S	180	Small group discussion Lectures and panels	8/15/56	I; 5 hr. daily, 6 days wk. for 6 wk.	225
26 G 904	Advanced Graduate Course in Obstetrics [349, 34]	Faculty of Medicine, University of Toronto, Toronto, Canada	B & C	B	240	Small group discussion Lecture and panel	8/22/56	C; 6 wk.	200

27. OPHTHALMOLOGY

27 G 184	Postgraduate Course in Ophthalmology [143, 5, 320, 10, 127]	Illinois Eye and Ear Infirmary of the University of Illinois College of Medicine 901 W. Adams St., Chicago 7	B & O	B	720	Laboratory work Clinical case work	7/ 5/56	C; 6 mo.	500
27 G 199	Basic Science in Ophthalmology [143, 5, 340, 10, 59]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	B & O	B	1950	Laboratory work Clinical case work	7/ 9/56	C; 12 mo.	500
27 G 260	Lancaster Courses in Basic Ophthalmology [350, 124, 143, 5, 16]	Colby College Waterville, Maine	B	B	425	Laboratory work Small group discussion	6/25/55	C; 11 wk.	325
27 G 220	Anatomy of Head and Neck as They Apply to Eye, Ear, Nose, Throat [5, 21, 143]	University of Maryland School of Medicine 29 S. Greene St., Baltimore 1	B	B	150	Laboratory work Small group discussion	9/15/55	Specially arranged	160
27 G 233	Ophthalmology [310, 143, 5, 331, 140, 16, 380]	Harvard Medical School Courses for Graduates 25 Shattuck St., Boston Massachusetts Eye and Ear Infirmary 243 Charles St., Boston	B & O	B	759	Laboratory work Clinical case work	9/26/55	C; 5 mo.	700
27 G 340	Ophthalmology [143, 5, 320, 128]	Washington University School of Medicine 660 S. Kingshighway, St. Louis 10	B & O	B	1200	Laboratory work Clinical case work	9/19/55	C; 8 mo.	800
27 G 522	576-A Ophthalmology (Graduate Course) [287, 10, 320, 5, 143]	New York University Post-Graduate Medical School 550 First Ave., New York	B & O	B	1125	Laboratory work Clinical case work	9/26/55	C; 9 mo.	815
27 G 917	Combined Eye, Ear, Nose and Throat Course [320, 143]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	B & O	B	2160	Laboratory work Clinical case work	10/ 3/55	C; full time for 9 mo.	1000
27 G 918	Combined Eye, Ear, Nose and Throat Course [320, 143]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	B & O	B	2160	Laboratory work Clinical case work	4/ 2/56	C; full time for 9 mo.	2160
27 G 740	Ophthalmology [307, 10, 320, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & O	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
27 G 934	Home Study Course in Ophthalmology [438]	Home study by correspondence	B	S	Varies	Assigned reading	9/ 1/55	Specially arranged	20

28. ORTHOPEDICS

28 G 938	Postgraduate Anatomy (Anatomy of the Back and Extremities) [143, 415, 414]	University of Alabama Medical Center 1919 Seventh Ave., South, Birmingham 3, Ala.	B	S	160	Laboratory work Small group discussion	9/20/55	Specially arranged	Unknown
28 G 079	Orthopedic Pathology [143, 5, 340, 10, 102, 431]	Combined course given at School of Medicine, Childrens Hospital, Denver General Hospital 4200 E. Ninth Ave., Denver 20	B	S	90	Laboratory work Small group discussion	9/55	C; 18 wk.	119
28 G 148	Orthopedic Basic Science [143, 5, 10, 64]	Northwestern University Medical School 303 E. Chicago Ave., Chicago 11	B	S	960	Laboratory work Small group discussion	7/ 1/56	C; 6 mo.	600
28 G 201	Basic Science in Orthopedics [143, 5, 340, 10, 100]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	B	B	850	Laboratory work Operative surgery	2/ 6/56	C; 5 mo.	300
28 G 200	Basic Science in Orthopedics [143, 5, 340, 10, 100]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	B	B	850	Laboratory work Operative surgery	9/ 7/55	C; 5 mo.	300
28 G 523	581-A Basic Sciences as Related to Orthopedic Surgery [120, 10, 320, 143]	New York University Post-Graduate Medical School 550 First Ave., New York	B & O	S	800	Laboratory work Clinical case work	1/ 3/56	C; 6 mo.	615
28 G 741	Orthopedic Surgery [300, 10, 320, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & O	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000

29. OTOLARYNGOLOGY

29 G 911	Postgraduate Anatomy (Anatomy of Head and Neck) [143, 414, 415]	University of Alabama Medical Center 1919 Seventh Ave., South, Birmingham 3, Ala.	B	S	160	Laboratory work Small group discussion	9/20/55	Specially arranged	Unknown
29 G 102	Basic Science of Otolaryngology [143, 5, 320, 127]	University of Illinois College of Medicine 1853 W. Polk St., Chicago 12	B	B	1584	Laboratory work Clinical case work	10/ 3/55	C; 9 mo.	750
29 G 167	Clinical and Anatomical Course in Otolaryngology [416, 425]	Indiana University School of Medicine 1100 W. Michigan St., Indianapolis	B	S	150	Laboratory work Lecture and panels	3/19/56	C; 2 wk.	250
29 G 231	Otolaryngology [310, 143, 5, 331, 10, 390]	Harvard Medical School Courses for Graduates 25 Shattuck St., Boston Massachusetts Eye and Ear Infirmary 243 Charles St., Boston	B & O	B	693	Laboratory work Clinical case work	10/31/55	C; 5 mo.	925

References will be found on pages 1129-1131.

Graduate Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

29. OTOLARYNGOLOGY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
29 G 524	593-A Basic Sciences of Otorhinolaryngology (Graduate Course) [147, 16, 329, 5, 143]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	S	1200	Laboratory work Clinical case work	9/26/55	C; 9 mo.	815
29 G 917	Combined Eye, Ear, Nose and Throat Course [329, 143]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	B & C	B	2160	Laboratory work Clinical case work	10/ 3/55	C; full time for 9 mo.	1000
29 G 918	Combined Eye, Ear, Nose and Throat Course [329, 143]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	B & C	B	2160	Laboratory work Clinical case work	4/ 2/56	C; full time for 9 mo.	2160
29 G 742	Otolaryngology [365, 16, 5, 143, 329]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
29 G 933	Home Study Course in Otolaryngology [438]	At home by correspondence	B	S	Varies	Assigned reading	9/ 1/55	Specially arranged	20

30. PATHOLOGY

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
30 G 122	Gross and Microscopic Pathology [143, 5, 329, 205]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	C	B	1500	Laboratory work Clinical case work	By appointment	C; 12 mo.	500
30 G 121	Gross and Surgical Pathology [143, 5, 329, 205]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	C	B	1250	Laboratory work Clinical case work	By appointment	C; 6 mo.	500
30 G 123	Gross and Surgical Pathology [143, 5, 329, 205]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	C	B	1600	Laboratory work Clinical case work	By appointment	C; 12 mo.	900
30 G 219	Neuropathology [29, 142, 13, 143, 5]	University of Maryland School of Medicine Gray Laboratory Bldg., Baltimore 1	B & C	S	900	Laboratory work Clinical case work	Unknown	C; 6 mo.	210
30 G 406	Pathology GM 1—Surgical Pathology [330]	Columbia-Presbyterian Medical Center 630 W. 168th St., New York	B	S	Arranged	Laboratory work Small group discussion	Arranged	Specially arranged for 6 or 12 mo.	300
30 G 859	Review for Specialty Boards [349]	University of Washington School of Medicine Health Sciences Building, Seattle	B	B	Arranged	Laboratory work	Arranged	Specially arranged	Unknown

31. PEDIATRICS

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
31 G 117	Course IV Pediatrics [95, 5, 143, 329]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	C	B	1500	Laboratory work Clinical case work	7/ 1/56	C; 12 mo.	750
31 G 822	6110-A Pediatrics (Graduate Course) [143, 5, 329, 135]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1260	Laboratory work Clinical case work	9/19/55	C; 9 mo.	815
31 G 473	Basic Science in Pediatrics [143, 423, 349, 16]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York 29	B & C	B	8 mo.	Clinical case work Small group discussion	10/10/55	C; 3 mo.	710
31 G 525	6110-A Pediatrics (Graduate Course) [143, 5, 329, 16, 135]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1230	Laboratory work Clinical case work	7/ 1/56	C; 9 mo.	815
31 G 743	Pediatrics [143, 5, 329, 19]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000

34. PUBLIC HEALTH

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
34 G 462	Public Health [16, 421]	School of Public Health, University of California Berkeley 4, Calif.	B & C	B	9 mo.	Laboratory work Clinical case work	9/13/55	C; 9 mo.	Unknown
34 G 204	Public Health [143, 311, 16, 51]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	B	B	3½ mo.	Laboratory work Small group discussion	9/14/55	C; 8½ mo.	700
34 G 206	Public Health [143, 420, 421, 16]	Tulane University School of Medicine 1430 Tulane Ave., New Orleans	B	S	8½ mo.	Laboratory work Small group discussion	9/14/55	C; 8½ mo.	700
34 G 209	Public Health [143, 341, 417, 16, 448]	The Johns Hopkins University School of Hygiene and Public Health 615 N. Wolfe St., Baltimore 5	B & C	B	1056	Laboratory work Clinical case work	9/29/55	C; 8 to 11 mo.	1200
34 G 210	Public Health [120, 449, 100]	The Johns Hopkins University School of Hygiene and Public Health 615 N. Wolfe St., Baltimore 5	B & C	S	8 mo.	Independent investigation and thesis	9/29/55	C; 8 mo.	1200

31 G 219	Public Health [143, 311, 10, 413, 340]	Harvard University School of Public Health 55 Shattuck St., Boston	B	B	9 mo.	Laboratory work Small group discussion	9/26/55	C; 9 mo.	1,150
31 G 320	Public Health [143, 311, 437, 20]	University of Minnesota School of Public Health Minneapolis 14	B & C	B	9 mo.	Small group discussion Lectures and panels	9/26/55	C; 9 mo.	380
31 G 427	Public Health [143, 311, 424, 10, 407]	Columbia University School of Public Health and Administrative Medicine 600 W. 168th St., New York 32	B	B	8 mo.	Laboratory work Clinical case work	9/29/55	C; 8 mo.	835
31 G 170	Public Health [143, 389, 441, 420]	University of Toronto Toronto 5, Canada	B & C	B	960	Laboratory work Small group discussion	9/19/55	C; 32 wk.	425

35. PHYSICAL MEDICINE AND REHABILITATION

35 G 065	879: Advanced Clinical Practice in Physical Medicine [5, 357, 182]	Los Angeles County Hospital 1200 N. State St., Los Angeles 33	B & C	B	1661	Clinical case work Small group discussion	9/55	C; 12 mo.	1000
35 G 061	880: Electrodiagnosis and Electromyography [5, 357, 182]	Los Angeles County Hospital 1200 N. State St., Los Angeles 33	B & C	B	128	Laboratory work Clinical case work	Arranged	C; 1 mo.	100
35 G 520	Physical Medicine and Rehabilitation (Graduate Course) [155, 320, 5, 143]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1260	Clinical case work Small group discussion	9/26/55	C; 9 mo.	815
35 G 411	Physical Medicine and Rehabilitation GM-1 [143, 15]	Columbia Presbyterian Medical Center 630 W. 168th St., New York	C	S	Arranged	Clinical case work	Arranged	Specially arranged	600 for 6 mo.
35 G 741	Physical Medicine and Rehabilitation [304, 10, 320, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000

39. PSYCHIATRY

39 G 266	619-A Psychiatry (Graduate Course) [143, 5, 320, 10]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1820	Laboratory work Clinical case work	9/12/55	C; 9 mo.	800
39 G 633	Graduate Course in Psychoanalytic Medicine [321, 57, 5, 143, 322]	Kings County Hospital 451 Clarkson Ave., Brooklyn 3, N. Y.	C	S	4120	Clinical case work Small group discussion	9/12/55	C; 3 yr. (specially arranged 4th yr.)	757 per yr.
39 G 950	Graduate Course in Psychoanalysis [10, 5, 335]	State University College of Medicine at New York City 606 Winthrop St., Brooklyn 3, N. Y.	B & C	S	4 yr.	Clinical case work Small group discussion	9/20/55	C; 18 mo.	Unknown
39 G 567	Introduction to Psychotherapy and Psychotherapeutic Techniques [432]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	22½	Lecture and panels	10/12/55	I; 1½ hr. weekly for 15 wk. Wednesdays	40
39 G 569	Clinical Conferences [432]	Postgraduate Center for Psychotherapy, 218 E. 70th St., New York	C	S	15	Small group discussion	10/12/55	I; 1½ hr. weekly for 10 wk. Wednesdays	30
39 G 566	Techniques of Dream Interpretation [432, 118]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	15	Small group discussion Lecture and panel	10/13/55	I; 1½ hr. weekly for 10 wk. Thursdays	30
39 G 568	Basic Psychiatry and Neurology [432]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	22½	Lectures and panels	10/13/55	I; 1½ hr. weekly for 15 wk. Thursdays	40
39 G 570	Seminar on Group Psychotherapy [432, 278]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	22½	Small group discussion	10/13/55	I; 1½ hr. weekly for 15 wk.	40
39 G 573	Clinical Conferences on Treatment Planning [432]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	22½	Small group discussion	2/11/56	I; 1½ hr. weekly for 15 wk. Tuesdays	40
39 G 571	Continuous Case Seminar [433]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	22½	Small group discussion	2/16/56	I; 1½ hr. weekly for 15 wk. Thursdays	40
39 G 571	Handling of Special Problems [433]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	7½	Lecture and panels	2/16/56	I; 1½ hr. weekly for 5 wk. Thursdays	15
39 G 572	Clinical Conferences—Character Disorders [432]	Postgraduate Center for Psychotherapy 218 E. 70th St., New York	C	S	15	Small group discussion	3/22/56	I; 1½ hr. weekly for 10 wk. Thursdays	30
39 G 628	619-A Psychiatry (Graduate Course) [143, 5, 320, 10]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1820	Laboratory work Clinical case work	7/ 1/56	C; 9 mo.	800
39 G 635	Graduate Course in Psychiatry [321, 5, 143, 324]	Kings County Hospital 451 Clarkson Ave., Brooklyn 3, N. Y.	C	B	6000	Laboratory work Clinical case work	7/ 1/56	C; 49 wk.	500 per yr.
39 G 961	Graduate Residency Training in Psychoanalytic Medicine [415, 10, 5, 143, 380]	Psychoanalytic Clinic for Training and Research Department of Psychiatry, College of Physicians and Surgeons, Columbia University 722 W. 168th St., New York 32	B & C	B	650	Clinical case work Small group discussion	7/ 1/56	C; 3 yr.	825 per yr.
39 G 905	Diploma in Psychiatry [143, 440, 430]	University of Toronto Toronto 5, Canada	B & C	B	24 mo.	Clinical case work Small group discussion	7/ 1/56	C; 24 mo.	65 yr.

References will be found on pages 1129-1131.

Graduate Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
40. PSYCHOANALYSIS									
40 G 268	Psychoanalytic Training [5, 339, 310]	Institute for Psychoanalytic Medicine of Southern California 416 N. Bedford Drive, Beverly Hills, Calif.	C	S	450	Clinical case work Small group discussion	9/ 6/55	C; 9 mo.	Unknown
40 G 951	Psychoanalysis [379]	San Francisco Psychoanalytic Institute 2235 Post St., San Francisco	C	B	336	Clinical case work	9/15/55	I; 2 hr. 4 times a wk. for 42 wk. Mondays, Tuesdays, Wednesdays, Thursdays	150 per semester
40 G 040	Psychoanalysis [373, 16, 374, 375]	Los Angeles Institute for Psychoanalysis 344 N. Bedford Drive, Beverly Hills, Calif.	C	Applicants selected	Undetermined	Clinical case work Small group discussion	9/55	Specially arranged	Unknown
40 G 899	103-W The Interpretation of Dreams: A Seminar [349, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	30	Lectures and panels	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 957	101-W The Basic Concepts of Psychoanalysis [349, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	30	Lectures and panels	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 958	102-W The Basic Literature of Psychoanalysis: A Seminar [143, 319]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 985	202-W The Literature of Psychoanalysis [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 986	203-W Scientific Method [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	6	Lectures and panels	10/55	I; 2 hr. every 2 wk. for 1 mo.	12
40 G 988	205-W Introduction to the Technique of Psychoanalysis [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	20	Lectures and panels	10/55	I; 2 hr. every 2 wk. for 7 mo.	40
40 G 984	201-W Pathological Formations [143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	30	Lectures and panels	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 989	206-W The Continuous Case Seminar [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B & C	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 990	207-W Clinical Conference [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B & C	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 991	301-W The Technique of Psychoanalysis [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	30	Lectures and panels	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 992	302-W The Current Literature of Psychoanalysis [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	30	Lectures and panels	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 993	303-W Seminar on Dreams [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B & C	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 995	306-W The Continuous Case Seminar [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B & C	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 996	307-W Clinical Conference [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B & C	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 999	407-W Clinical Conference [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B & C	S	30	Small group discussion	10/55	I; 2 hr. every 2 wk. for 8 mo.	60
40 G 987	204-W The Theory and Technique of Dream Interpretation [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	24	Lectures and panels	11/55	I; 2 hr. every 2 wk. for 7 mo.	48
40 G 997	309-W Child Analysis [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B	S	16	Lectures and panels	11/55	I; 2 hr. every 2 wk. for 6 mo.	32
40 G 998	406-W The Continuous Case Seminar [340, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C.	B & C	S	30	Small group discussion	11/55	I; 2 hr. every 2 wk. for 8 mo.	60

40 G 994	305-W Applied Psychoanalysis [310, 143]	The Washington Psychoanalytic Institute 1720 M St., N. W., Washington, D. C	B	S	20	Lectures and panels	11/55	I; 2 hr. every 2 wk. for 7 mo.	40
40 G 140	Theory and Practice of Psychoanalysis [376, 5, 143, 345, 16]	Chicago Institute for Psychoanalysis 664 N. Michigan Ave., Chicago 11	B & C	S	1216	Clinical case work Small group discussion	9/30/55	I; 1 hr. 6 days a wk. for 240 wk.	3050
40 G 917	Graduated series of lectures and seminars covering theory and technique of psychoanalysis [150, 385, 16]	New Orleans Psychoanalytic Training Center 3706 Prytania St., New Orleans 15	C	S	5 yr.	Clinical case work Small group discussion	9/55	Specially arranged for 5 yr.	600 per yr.
40 G 369	The Psychoanalytic Relationship [404, 5, 10, 405, 58]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	22½	Clinical case work Lectures and panels	9/12/55	I; 1½ hr. weekly for 15 wk. Mondays	60
40 G 375	Readings in Psychoanalysis Part II, The Works of Freud [404, 5, 405, 10, 31]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	30	Lectures and panels	9/12/55	I; 1½ hr. weekly for 20 wk. Mondays	60
40 G 500	Psychoanalysis [5, 351, 378]	The New York Psychoanalytic Institute 247 E. 82nd St., New York 28	C	S	5 yr. minimum	Clinical case work Small group discussion	9/12/55	I; 1½ hr. 4 days a wk. for 36 wk.	625 annually
40 G 364	Continuous Case Seminar [100, 5, 10, 404, 405]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Clinical case work	9/13/55	I; 1½ hr. weekly for 10 wk. Tuesdays	40
40 G 373	Readings in Psychoanalysis Part 1, The Works of Karen Horney [404, 5, 405, 10, 31]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	37½	Lectures and panels	9/13/55	I; 1½ hr. weekly for 25 wk. Tuesdays	75
40 G 362	Clinical Conferences [5, 400, 10, 105, 104]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Clinical case work	9/23/55	I; 1½ hr. weekly for 10 wk. Fridays	40
40 G 363	Clinical Conferences [100, 5, 10, 404, 405]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Clinical case work	9/23/55	I; 1½ hr. weekly for 10 wk. Fridays	40
40 G 372	Clinical Conferences on Case Histories [404, 5, 405, 10, 64]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Clinical case work	9/23/55	I; 1½ hr. weekly for 10 wk. Fridays	30
40 G 367	Group Psychodynamics and Group Psychoanalysis [300, 404, 5, 405, 10, 153]	New School for Social Research 66 W. 12th St., New York	C	S	22½	Lectures and panels	9/27/55	I; 1½ hr. weekly for 15 wk. Tuesdays	24
40 G 366	Workshop on Dynamics of Behavior [300, 153, 405, 404, 5, 10]	New School for Social Research 66 W. 12th St., New York	C	S	22½	Clinical case work Lectures and panels	10/ 3/55	I; 1½ hr. weekly for 15 wk. Mondays	35
40 G 614	Social Psychology A-2 [101]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	15	Lectures and panels	10/ 3/55	I; 1½ hr. weekly for 10 wk. Mondays	40
40 G 621	Modern Conceptions of Psychoanalysis B-1 [101]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	9	Lectures and panels	10/ 3/55	I; 1½ hr. every 2 wk. for 2 mo. Mondays	20
40 G 625	Comprehensive Course in Psychoanalysis for Psychiatrists [5, 351]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	599	Clinical case work Small group discussion	10/ 3/55	I; 2 hr. every wk. for 60 mo.	880 for 6 yr.
40 G 613	Basic Psychoanalytic Principles and Seminar in Basic Psychoanalytic Principles A-1 and AS-1 [352]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	22	Small group discussion Lectures and panels	10/ 4/55	I; 2 hr. weekly for 11 wk. Tuesdays	45
40 G 623	Introductory Seminar in Psychoanalysis BS-3 [95, 355]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	22	Clinical case work	10/ 5/55	I; 2 hr. weekly for 2 mo. Wednesdays	50
40 G 627	Case Seminar in Psychoanalysis BS-5 [95, 103]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	20	Clinical case work Small group discussion	10/ 6/55	I; 2 hr. weekly for 2 mo. Thursdays	50
40 G 618	Freud's Theory of Neurosis AS-6 [358, 10]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	16	Small group discussion	10/11/55	I; 2 hr. monthly for 8 mo. Tuesdays	35
40 G 632	Papers on Technique BS-9 [95, 10, 402]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	16	Clinical case work Small group discussion	10/24/55	I; 2 hr. monthly for 8 mo. Mondays	35
40 G 624	Clinical Conceptions of Mental Disorders B-15 [9]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	20	Clinical case work Small group discussion	1/ 9/56	I; 2 hr. every 2 wk. for 4 mo. Mondays	40

References will be found on pages 1129-1131.

Graduate Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
		40. PSYCHOANALYSIS—Continued							
40 G 615	Evolution of Psychoanalytic Concepts and Seminar in Evolution of Psychoanalytic Concepts A-3 and AS-3 [352]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	22	Small group discussion Lectures and panels	1/11/56	I; 2 hr. every 2 wk. for 5 mo. Wednesdays	45
40 G 626	Seminar on Child Psychiatry BS-16 (Elective) [95, 401]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	22	Clinical case work Small group discussion	1/11/56	I; 2 hr. every 2 wk. for 5 mo. Wednesdays	50
40 G 617	Seminar in Literature of Psychoanalysis, Part I AS-5 [353, 354]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	22	Small group discussion	1/18/56	I; 2 hr. every 2 wk. for 5 mo. Wednesdays	45
40 G 619	Theory and Practice of Dream Interpretation AS-7 [353]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	20	Clinical case work Small group discussion	1/19/56	I; 2 hr. every 2 wk. for 5 mo. Thursdays	45
40 G 630	Case Seminar on Psychosomatic Problems BS-30 [95, 102]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	16	Clinical case work Small group discussion	1/23/56	I; 2 hr. every 2 wk. for 3 mo. Mondays	40
40 G 628	Continuous Case Seminar in Psychoanalysis BS-6 [95, 403]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	20	Clinical case work Small group discussion	1/26/56	I; 2 hr. every 2 wk. for 5 mo. Thursdays	50
40 G 371	Introduction to Psychoanalytic Technique [104, 5, 405, 16, 64]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Lectures and panels	1/30/56	I; 1½ hr. weekly for 10 wk. Mondays	30
40 G 376	The Psychoanalytic Process [404, 5, 405, 16, 34]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	22½	Clinical case work Lectures and panels	1/30/56	I; 1½ hr. weekly for 15 wk. Mondays	60
40 G 631	Seminar on Crises in Psychotherapy BS-29 (Elective) [95, 403]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	20	Clinical case work Small group discussion	1/30/56	I; 2 hr. every 2 wk. for 5 mo.	50
40 G 365	Continuous Case Seminar [406, 5, 16, 401, 405]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	22½	Clinical case work	1/31/56	I; 1½ hr. weekly for 15 wk. Tuesdays	60
40 G 377	Postgraduate Course—Continuous Case Seminar for Certified Analysis [404, 412, 411]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Clinical case work	1/31/56	I; 1½ hr. weekly for 10 wk. Tuesdays	40
40 G 374	Clinical Conferences on Case Histories [11, 64, 104, 5, 405, 16]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Clinical case work	2/ 2/56	I; 1½ hr. weekly for 10 wk. Thursdays	30
40 G 616	Anthropology and the Comparative Study of Civilization A-4	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	15	Lectures and panels	2/ 3/56	I; 1½ hr. weekly for 5 mo. Fridays	30
40 G 629	Research Seminar in Hypnosis BS-19 (Elective) [95, 102]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	10½	Clinical case work Small group discussion	2/ 3/56	I; 1½ hr. every 2 wk. for 2 mo. Fridays	25
40 G 370	Introductory Course on Dreams [404, 5, 405, 16, 34]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Lectures and panels	2/ 3/56	I; 1½ hr. weekly for 10 wk. Fridays	30
40 G 378	The Practice of Group Psychoanalysis [19, 5, 16, 401, 405]	American Institute for Psychoanalysis 220 W. 98th St., New York 25	C	S	15	Clinical case work Lectures and panels	2/ 3/56	I; 1½ hr. weekly for 10 wk. Fridays	30
40 G 368	Love, Sex, and Marriage (A Workshop) [308, 404, 5, 405, 16, 243]	New School for Social Research 66 W. 12th St., New York	C	S	22½	Clinical case work Lecture and panel	2/ 6/56	I; 1½ hr. weekly for 15 wk. Mondays	35
40 G 379	Neuroses and Psychoses [309, 404, 5, 405, 16, 243]	New School for Social Research 66 W. 12th St., New York	C	S	22½	Lectures and panels	2/ 7/56	I; 1½ hr. weekly for 15 wk. Tuesdays	24
40 G 622	Advanced Seminar on Theory of Dream Interpretation BS-8 [100, 403]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	C	S	14	Clinical case work Small group discussion	2/ 7/56	I; 2 hr. every 2 wk. for 3 mo. Tuesdays	35
40 G 620	Psychological Development of the Normal Child A-8 [76]	The William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology 12 E. 86th St., New York 28	B	S	9	Small group discussion Lectures and panels	4/23/56	I; 3 hr. twice weekly for 1 wk. Mondays and Thursdays	30
40 G 963	No. 1002 Theory of Instinct and Ego Development [345]	The Psychoanalytic Training Center School of Medicine, Western Reserve University	B & C	S	48	Small group discussions	10/55	I; 1½ hr. weekly for 8 mo. Thursdays	Unknown

40 G 964	No. 1001 Historical Development of Analytic Thought [345]	The Psychoanalytic Training Center School of Medicine, Western Reserve University 2039 Adelbert Rd., Cleveland	B & C	S	36	Small group discussion	10/55	I; 1½ hr. weekly for 8 mo. Saturdays	Unknown
40 G 970	No. 1003 Psychology of Dreams [345]	The Psychoanalytic Training Center School of Medicine, Western Reserve University 2039 Adelbert Rd., Cleveland	B & C	S	48	Small group discussion	10/55	I; 1½ hr. weekly for 8 mo. Tuesdays	Unknown
40 G 971	No. 3001 Continuous Case Seminar [346]	The Psychoanalytic Training Center School of Medicine, Western Reserve University 2039 Adelbert Rd., Cleveland	C	S	24	Clinical case work Small group discussion	10/55	I; 1½ hr. every 2 wk. for 8 mo. Tuesdays	Unknown
40 G 972	No. 3003 Case Conferences on the Analyses of Children [346]	The Psychoanalytic Training Center Western Reserve University School of Medicine, 2039 Adelbert Rd., Cleveland	C	S	48	Clinical case work Small group discussion	10/55	I; 1½ hr. weekly for 8 mo. Thursdays	Unknown
40 G 973	No. 3007 *Seminars on Selected* Topics [345]	The Psychoanalytic Training Center Western Reserve University School of Medicine, 2039 Adelbert Rd., Cleveland	B & C	S	16	Small group discussion	11/55	I; 4 hr. every 2 mo. for 7 mo. Saturdays	Unknown
40 G 799	Course I. For Psychiatrists Who Desire to Specialize in the Practice of Psychoanalysis (Professional School Course) [5, 450, 452]	Institute of the Philadelphia Association for Psychoanalysis 122 S. 18th St., Philadelphia	B & C	S	1 yr.	Clinical case work Small group discussion	9/55	I; 1½ hr. daily 6 days a wk. biweekly sessions for 11 mo.	400 yr.
40 G 800	Course III. For Psychoanalytic Students Who Desire to Specialize in the Practice of Psychoanalysis of Children [451, 453]	Institute of the Philadelphia Association for Psychoanalysis 122 S. 18th St., Philadelphia	B & C	S	1 yr.	Clinical case work Small group discussion	9/55	I; 1½ hr. daily 6 days a wk. at varying intervals for 11 mo.	1.50 hr.

41. PSYCHOSOMATIC MEDICINE

41 G 719	Psychosomatic Medicine [350]	Philadelphia Psychiatric Hospital Ford and Monument roads, Philadelphia 31	Unknown	B	8	Lectures and panels	10/55	I; 1 hr. monthly for 8 mo. Thursdays	Nil

43. RADIOLOGY

43 G 066	858: Diagnostic and Therapeutic *Radiology* [358, 143, 5, 337, 182]	Los Angeles County Hospital *1200 N. State St., Los Angeles 33*	B & C	B	116 to 1661	Laboratory work Clinical case work	9/55	C; 3 to 12 mo.	250 for 3 mo.
43 G 119	Radiation Physics [143, 10, 409, 410]	Northwestern University Medical School 303 E. Chicago Ave., Chicago 11	B	B	32	Lectures and panels	1/56	I; 2 hr. weekly for 4 mo. Mondays	25
43 G 118	Diagnostic Roentgenology [143, 5, 320, 205]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	C	B	1000	Laboratory work Clinical case work	By appointment	C; 8 mo.	500
43 G 119	Diagnostic Roentgenology [143, 5, 320, 205]	Cook County Graduate School of Medicine 707 S. Wood St., Chicago 12	C	B	1500	Laboratory work Clinical case work	By appointment	C; 12 mo.	750
43 G 529	653-A Basic Sciences of Radiology (Graduate Course) [342, 10, 329, 5, 143]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1130	Laboratory work Clinical case work	9/20/55	C; 9 mo.	815
43 G 475	Basic Science in Radiology [143, 423, 346, 10]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York 29	B & C	B	8 mo.	Small group discussions Lectures and panels	10/10/55	C; 8 mo.	710
43 G 170	Basic Science in Surgery [143, 423, 319, 10]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York 29	B & C	B	8 mo.	Laboratory work Clinical case work	10/10/55	C; 8 mo.	710
43 G 715	Radiology [363, 10, 5, 143, 320]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1230
43 G 467	Medical Radiology [143, 122, 139, 10, 344]	University of Toronto Toronto 5, Canada	B & C	B	600	Laboratory work Clinical case work	7/ 1/56	C; 24 mo.	250
43 G 901	Medical Radiology (Diagnosis-Therapy) [10, 320, 5]	Queen's University, Faculty of Medicine Kingston, Ontario, Canada	C	B	2 yr.	Laboratory work Clinical case work	9/12/56	C; 2 yr.	200

44 SURGERY

44 G 006	Basic Science Course in Surgery and Surgical Specialties [26, 5, 10, 143, 319]	College of Medical Evangelists 1720 Brooklyn Ave., Los Angeles 33	B	B	1220	Laboratory work Clinical case work	10/ 2/55	C; 9 mo.	800
44 G 073	Surgical Anatomy [143, 5, 319, 10, 427]	University *of Colorado School of* Medicine 1200 E. Ninth Ave., Denver 20	B	B	225	Laboratory work Small group discussion	3/15/56	C; 16 wk.	Varies
44 G 221	Surgical Anatomy [143, 5, 9]	University of Maryland School of Medicine 29 S. Greene St., Baltimore 1	B	S	90	Laboratory work Lectures and panels	1/24/56	I; 3 hr. twice weekly for 15 wk. Mondays, Wednesdays	150

References will be found on pages 1129-1131.

Graduate Courses for Physicians—Sept. 1, 1955, to Aug. 31, 1956—Continued

44. SURGERY—Continued

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
44 G 222	General Anatomy [41, 5, 13]	University of Maryland School of Medicine 29 S. Greene St., Baltimore 1	B	B	Variable	Laboratory work Small group discussion	Unknown	Specially arranged	Variable
44 G 530	665-A Surgery (Graduate Course) [347, 10, 320, 5, 143]	New York University Post-Graduate Medical School 550 First Ave., New York	B & C	B	1200	Laboratory work Clinical case work	9/26/55	C; 9 mo.	815
44 G 431	Surgical Anatomy [51, 5, 143, 300]	Cornell University Medical College 1300 York Ave., New York 21	B & C	S	160	Lectures, demonstrations, and dissections	5/30/56	C; 4 wk.	200
44 G 409	Surgery GM 2—Principles of Cardiovascular Surgery [15]	Columbia-Presbyterian Medical Center 630 W. 168th St., New York	B	S	Arranged	Laboratory work Small group discussion	Arranged	Specially arranged for 6 mo.	600
44 G 410	Surgery GM 2A—Studies in Cardiovascular Surgery [143, 5]	Columbia-Presbyterian Medical Center 630 W. 168th St., New York	B & C	S	Arranged	Laboratory work Small group discussion	Arranged	Specially arranged	600 for 6 mo.
44 G 746	Surgery [302, 10, 320, 5, 143]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000
44 G 804	Master of Medical Science [143, 423, 349]	University of South Dakota School of Medical Sciences Medicine and Science Building, Vermillion, S. D.	B	B	400-600	Laboratory work Small group discussion	9/ 1/55	C; 9 mo.	100
44 G 808	Master of Medical Science [143, 423, 349]	University of South Dakota School of Medical Sciences Medicine and Science Building, Vermillion, S. D.	B	B	400-600	Laboratory work Small group discussion	2/ 1/56	C; 9 mo.	100
44 G 909	Postgraduate Course in Surgery [5, 434, 133]	Royal Victoria Hospital 687 Pine Ave., West, Montreal, Canada	B & C	S	180	Operative surgery Small group discussion	8/55	I; 5 hr. daily 6 days wk. for 6 wk.	225
44 G 888	Surgical Anatomy (503) [57, 5, 323]	University of British Columbia Vancouver 8, British Columbia, Canada	B	B	90	Laboratory work Lecture and panels	10/ 3/55	I; 3 hr. weekly for 30 wk: Mondays	10
44 G 891	Surgical Anatomy [5, 335, 28]	Faculty of Medicine, Laval University 6 University St., Quebec, Canada	C	S	80	Laboratory work Operative surgery	11/ 1/55	I; 3 hr. weekly for 6 mo. Thursdays	150
44 G 469	Course leading to the Degree of Master of Surgery [143, 442, 443, 444]	University of Toronto Toronto 5, Canada	B & C	B	12 mo.	Laboratory work Clinical case work	7/ 1/56	C; 12 mo.	120
44 G 901	Advanced Graduate Course in Surgery [349, 34]	Faculty of Medicine, University of Toronto Toronto, Canada	B & C	B	240	Small group discussion Lecture or panel	8/22/56	C; 6 wk.	200

47. TROPICAL MEDICINE

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
47 G 205	Public Health (Tropical Medicine) [143, 341, 16, 51]	Tulane University, School of Medicine 1430 Tulane Ave., New Orleans	B & C	B	8½ mo.	Laboratory work Clinical case work	9/14/55	C; 8½ mo.	700

48. UROLOGY

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
48 G 940	Anatomy of Male Pelvis and Abdomen [143, 415, 414]	University of Alabama Medical Center 1919 Seventh Ave., South, Birmingham 3, Ala.	B	S	128	Laboratory work Small group discussion	9/20/55	Specially arranged	Unknown
48 G 913	Urology—Basic Sciences [320, 143]	New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	B & C	B	1920	Laboratory work Clinical case work	10/ 3/55	C; full time for 8 mo.	800
48 G 477	Basic Science in Urology [143, 423, 349, 16]	New York Medical College, Flower and Fifth Avenue Hospitals 1 E. 105th St., New York	B & C	B	8 mo.	Laboratory work Clinical case work	10/10/55	C; 8 mo.	710
48 G 919	Urology—Basic Sciences [320, 143]	New York Polyclinic, Medical School and Hospital 345 W. 50th St., New York 19	B & C	B	1920	Laboratory work Clinical case work	4/ 2/56	C; 8 mo.	800
48 G 747	Urology [301, 10, 5, 143, 329]	Graduate School of Medicine, University of Pennsylvania Philadelphia	B & C	B	1280	Laboratory work Clinical case work	9/26/55	C; 8 mo.	1000

49. OTHER

Course Code No.	Title of Course	Location of Course	Type	Designed For	Total Hours	Methods of Instruction	Starting Date	Time Arrangements	Fee in Dollars
49 G 211	Master of Science in Hygiene [127, 10, 306, 423]	The Johns Hopkins University School of Hygiene and Public Health 615 N. Wolfe St., Baltimore 5	B	B	2 yr.	Laboratory work Small group discussion	9/29/55	C; 16 mo.	1200 per yr.
49 G 212	Doctor of Science in Hygiene [181, 307, 308]	The John Hopkins University School of Hygiene and Public Health 615 N. Wolfe St., Baltimore 5	B	B	3 yr.	Laboratory work Small group discussion	9/29/55	C; 2 yr.	1200 per yr.

References will be found on pages 1129-1131.

REFERENCES

Addresses for Inquiries

2. American Academy of Allergy, 208 E. Wisconsin Ave., Milwaukee.

3. Hansel Foundation, 634 N. Grand Blvd., St. Louis.

7. Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.

10. American College of Allergists, 401 LaSalle Medical Bldg., Minneapolis 2.

12. U. S. Veterans Hospital, University Drive, Pittsburgh.

14. College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles.

22. New York State Society of Anesthesiologists, 137 W. 11th St., New York 11.

29. Committee on Postgraduate Courses, University of Maryland School of Medicine, 29 S. Greene St., Baltimore.

35. San Francisco Heart Association, Inc., 604 Mission St., San Francisco 5.

38. Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 20.

43. University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12.

44. Dr. Joseph E. F. Riseman, 29 Commonwealth Ave., Boston.

55. Dr. Henry H. Turner, The Endocrine Society, 1200 N. Walker St., Oklahoma City.

56. American Fracture Association, 610 Griesheim Bldg., Bloomington, Ill.

60. Alabama Academy of General Practice, 17 Moulton St., Montgomery, Ala.

63. Los Angeles County Heart Association, 316 S. Bonnie Brae St., Los Angeles.

70. Postgraduate Medical Institute, 30 The Fenway, Boston.

73. Dr. Harold Swanberg, Secretary, Tri-State Postgraduate Association of Illinois, Missouri and Iowa, 209-224 W.C.U. Bldg., Quincy, Ill.

76. Dr. Matthew Molitch, 705 Pacific Ave., Atlantic City, N. J.

77. Office of Continuation Education, The School of Medicine, University of North Carolina, Chapel Hill, N. C.

78. Dr. R. Stuart Roberson, Hazelwood, N. C.

80. Dr. William G. Stephenson, 612 Medical Arts Bldg., Chattanooga, Tenn.

82. American Geriatrics Society, 25 Mechanic St., Wakefield, R. I.

84. Medical Extension, University of California, San Francisco 22.

107. Columbia University, 630 W. 168th St., New York 32.

110. Edwin R. Meiss, Cancer Society, 1044 Chapel St., New Haven, Conn., or Dr. Creighton Barker, Executive Secretary, Connecticut State Medical Society, 160 St. Ronan St., New Haven, Conn.

111. Communicable Disease Center, Laboratory Training Services, P.O. Box 185, Chamblee, Ga.

113. Communicable Disease Center, Virus and Rickettsia Laboratories, U.S. Public Health Service, Montgomery, Ala.

116. Dr. Joseph A. Beauchemin, Program Director, Ninth Connecticut Postgraduate Seminar in Psychiatry and Neurology, Connecticut State Hospital, Middletown, Conn.

119. Bureau of Maternal and Child Health, Florida State Board of Health, P.O. Box 210, Jacksonville, Fla.

145. Martland Medical Center, Newark, N. J.

157. American Academy of Plastic Surgery of Head and Neck, Manhattan General Hospital, 307 Second Ave., New York.

165. Dr. Harry Weber, Director, Mayo Clinic, Rochester, Minn.

171. Cleveland Area Heart Society, 2073 E. Ninth St., Cleveland.

174. Oswald Swinney Lowsley Foundation for Urology, 451 W. 51st St., New York 21.

176. Dr. Creighton Barker, Executive Secretary Connecticut State Medical Society, 160 St. Ronan St., New Haven, Conn.

177. Oklahoma City Clinical Society, 503 Medical Arts Bldg., Oklahoma City.

182. Medical Extension Education, University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33.

185. Dr. Philip A. Reynolds, Secretary, 2010 Wilshire Blvd., Los Angeles 57.

186. Dr. A. J. Murietta, Jr., 635 S. Westlake Ave., Los Angeles 57.

190. Graduate School of Medicine, University of Pennsylvania, Philadelphia.

194. University of Minnesota Center for Continuation Study, Minneapolis 14.

206. The University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston, Texas.

209. Washington State Medical Society, 1309 Seventh Ave., Seattle.

210. Medical Postgraduate Division, Tufts University School of Medicine, 171 Harrison Ave., Boston.

211. Dr. Robert L. Bennett, Medical Director, Georgia Warm Springs Foundation, Warm Springs, Ga.

217. Executive Office, 412 Jesse H. Jones Library Bldg., Houston 25, Texas.

220. Dr. C. A. Smith, Chief, Venereal Disease Control Program, Division of Special Health Services, Bureau of State Services, Public Health Service, Department of Health, Education, and Welfare, Washington 25, D. C.

222. Postgraduate Committee, Tennessee State Medical Association, 4 S. Dunlap, Memphis 3, Tenn.

227. North Carolina State Board of Health, Raleigh, N. C.

230. American College of Chest Physicians, 112 E. Chestnut St., Chicago 11.

233. Dr. Harold A. Jacobziner, Assistant Commissioner, New York City Health Department, 125 Worth St., New York.

234. Kips Bay Health Center, 411 E. 69th St., New York.

235. The Radiological Society of North America, Inc., 713 E. Genesee St., Syracuse, N. Y.

237. Wisconsin Academy of General Practice, 758 N. 27th St., Milwaukee. 8.

239. New Orleans Graduate Medical Assembly, Room 103, 1430 Tulane Ave., New Orleans 12.

240. The American College of Physicians, 4200 Pine St., Philadelphia 4.

244. American Diabetes Association, Inc., 1 E. 45th St., New York 17.

247. Connecticut Division, American Cancer Society, 1044 Chapel St., Hartford, Conn.

249. Texas Academy of General Practice, 208 W. 15th St., Austin, Tex.

252. University of Missouri, Columbia, Mo.

255. Dr. F. P. Rhoades, Chairman, Educational Program Committee, Michigan Academy of General Practice, 970 Maccabees Bldg., Detroit 2.

258. James C. Anderson, Executive Secretary, International Medical Assembly of Southwest Texas, P.O. Box 2445, San Antonio 6, Texas.

263. American College of Gastroenterology, 33 W. 60th St., New York 23.

264. Oregon State Medical Society, 1115 S.W. Taylor St., Portland 5, Ore.

266. Dr. Louis P. Armanino, Chairman, Postgraduate Committee, 2633 Pacific Ave., Stockton, Calif.

270. Dr. James A. Blake, Minnesota Academy of General Practice, 15 Ninth Ave., S., Hopkins, Minn.

271. New York Academy of Medicine, 2 E. 103rd St., New York 29.

276. Missouri State Medical Association, 623 Missouri Bldg., St. Louis.

277. Dr. P. V. Siegel, Secretary, Bothwell Hospital, Sedalia, Mo.

279. Central Office, American Academy of Orthopedic Surgeons, 116 S. Michigan Ave., Chicago.

280. Mr. H. H. Allen, Allen Travel Service, Inc., 550 Fifth Ave., New York.

282. Dr. J. Jesse Selinkoff, Chairman, Education Commission, Delaware Academy of General Practice, 1305 New Rd., Wilmington 5, Del.

288. Dr. George M. Jones, Secretary-Treasurer, The Texas Academy of Internal Medicine, Medical Arts Bldg., Dallas, Texas.

292. The Dallas Tuberculosis Association, 3925 Maple, Dallas, Texas.

294. Virginia Academy of General Practice, 1105 W. Franklin St., Richmond, Va.

299. Dr. Edward J. Welsh, Chairman, Committee for Course, Massachusetts Tuberculosis and Health League, 131 Clarendon St., Boston 16.

302. Illinois Academy of General Practice, 14 E. Jackson Blvd., Chicago 4.

309. American Institute for Psychoanalysis, 220 W. 98th St., New York.

310. Courses for Graduates, Harvard Medical School, 25 Shattuck St., Boston 15.

316. Dr. C. A. Broaddus, Director, Postgraduate Activities, California Medical Association, Box A-1, Carmel, Calif.

318. Dr. Karlton Kemp, Tri-State Medical Society, 408 Hazel, Texarkana, Ark.

320. American Congress of Physical Medicine and Rehabilitation, 30 N. Michigan Ave., Chicago.

321. State University of New York College of Medicine, 462 Clarkson Ave., Brooklyn 3, N. Y.

325. Massachusetts Academy of General Practice, 37 Nathan Rd., Newton Center 49, Mass.

327. Chicago Medical Society, 86 E. Randolph St., Chicago.

359. Ophthalmological Study Council, Sullivan Harbor, Maine.

381. Southwestern Poliomyelitis Respiratory Center (Jefferson Davis Hospital), 1801 Buffalo Drive, Houston, Texas.

382. Queen's University, Faculty of Medicine, Kingston, Ontario, Canada.

383. Department of Medicine, Graduate School, University of Florida, Jacksonville 4, Fla.

386. Dr. Sam S. Zuckerman, Memorial Hospital, Cheyenne, Wyo.

387. Wyoming State Medical Society, Box 2036, Cheyenne, Wyo.

395. Mt. Sinai Hospital of Greater Miami, 4300 Alton Rd., Miami Beach, Fla.

438. American Academy of Ophthalmology and Otolaryngology, 100 First Ave. Bldg., Rochester, Minn.

Enrollment

	Minimum	Maximum
1.	100	250
4.	35	50
6.	5	12
8.	5	...
9.	5	20
11.	20	50
13.	1	1
15.	...	3
18.	8	16
19.	6	20
20.	...	25
21.	1	4
23.	2	2
24.	8	8
25.	12	12
26.	6	30
27.	...	40
28.	6	12
30.	25	60
31.	10	30
32.	3	...
33.	20	...
34.	10	25
36.	700	985
41.	...	35
42.	...	75
45.	...	60
46.	15	40
47.	5	45
48.	5	40
49.	5	6
50.	1	...
51.	...	20
52.	...	50
53.	50	100
54.	75	200
57.	...	30
58.	10	20
59.	3	4
61.	...	500
62.	200	500
64.	6	15
71.	35	150
72.	35	100
75.	975	1,075
76.	5	50
79.	100	150
81.	500	690
83.	10	16
85.	...	100
87.	2	6
88.	3	6
89.	3	15
90.	2	5

	Minimum	Maximum
91.	2	4
92.	6	10
93.	10	15
94.	15	75
95.	5	10
96.	20	100
97.	10	35
98.	3	10
100.	...	110
101.	10	50
102.	...	10
103.	...	15
106.	...	6
108.	6	...
109.	12	...
112.	...	12
114.	...	22
116.	1	3
117.	4	10
118.	8	20
120.	4	20
121.	...	31
122.	1	5
124.	50	80
125.	...	150
126.	4	12
127.	12	20
128.	...	5
129.	5	5
130.	8	12
131.	4	6
132.	6	8
133.	8	10
134.	5	30
135.	4	8
136.	4	...
137.	125	225
141.	...	65
142.	...	18
144.	*20*	*40*
147.	4	16
148.	15	25
149.	20	30
150.	10	...
151.	4	15
152.	10	10
153.	15	50
154.	...	37
155.	12	30
156.	10	40
159.	10	100 (lecture)
	...	20 (seminar)
160.	5	15
161.	10	100 (lecture)
	...	25 (seminar)
162.	10	80
163.	...	300
168.	5	8
169.	15	20
173.	15	30
175.	...	85
178.	900	1,000
180.	35	75
181.	35	40
183.	...	4
187.	...	2
188.	80	200
191.	3	12
192.	10	55
193.	16	20
195.	8	14
196.	3	3
197.	1	2
198.	8	18
199.	4	4
200.	10	12
201.	12	16
202.	6	16
203.	25	25
204.	10	18
205.	1	6
207.	25	50
208.	10	65
214.	...	54
216.	2	8
218.	2,300	3,000
219.	...	180
221.	50	75
223.	15	35
224.	90	180
225.	25	55
226.	25	75
228.	25	45
231.	75	150
232.	8	...
236.	...	1,000
238.	330	450
242.	30	40
243.	20	60
245.	25	...
250.	200	350
251.	40	50
253.	26	26
256.	700	900
257.	800	1,200
259.	32	32
260.	800	2,000
262.	100	300
265.	30	60
267.	80	150
272.	25	40
275.	100	200
278.	12	15
283.	40	65
287.	12	24
293.	30	150
295.	30	45
296.	2,000	3,000
300.	25	100
301.	30	...
303.	25	90
304.	35	90
305.	30	70
306.	35	70
307.	*30*	*55*
308.	30	75
311.	20	35
312.	12	50
313.	*20*	25
314.	40	75
317.	50	500
326.	20	75
332.	2	3
338.	2	12
340.	60	60
342.	1	10
344.	...	8
347.	25	35
350.	50	125
352.	50	100 (lecture)
	...	25 (seminar)
353.	5	46
356.	...	1
361.	1	16
362.	13	78
363.	1	42
364.	1	7
365.	2	24
366.	1	14
367.	7	29
368.	1	15
369.	4	15
370.	2	29
371.	1	20
372.	20	20
373.	41	44
376.	65	...
378.	75	75
379.	...	70
384.	136	212
385.	75	250
392.	124	204
393.	60	75
406.	7	10
407.	40	*40*
408.	30	30
410.	10	90
411.	6	25
413.	...	120
414.	2	...
417.	25	66
425.	12	45
433.	15	45
445.	15	18
448.	55	80

Sponsors and Co-Sponsors

17. Kansas Society of Anesthesiology, Kansas City Society of Anesthesiologists, Kansas Medical Society, *Kansas State Board of Health.*

39. Kansas Heart Association; Kansas City, Missouri, Heart Association; Kansas State Board of Health; Kansas Medical Society.

68. Greater Kansas City Academy of General Practice, Wyandotte Academy of General Practice.

69. Kansas Medical Society, Kansas Academy of General Practice, Kansas State Board of Health.

86. Kansas State Obstetrical Society, Kansas Medical Society, Kansas State Board of Health.

123. Kansas City Society of Ophthalmology and Otolaryngology, Kansas Medical Society, Kansas State Board of Health.

140. Kansas Medical Society, Kansas State Board of Health.

146. New Jersey Department of Health, New Jersey Medical Society.

164. Kansas Medical Society, Kansas State Board of Health, Kansas Tuberculosis and Health Association.

167. Kansas Radiological Society; Radiological Society of Greater Kansas City; Kansas *Medical Society; Kansas State Board of Health;* Kansas Division, American Cancer Society.

170. Kansas Medical Society; Kansas State Board of Health; Kansas Division, American Cancer Society.

215. Michigan State Medical Society, Wayne University College of Medicine, Michigan Department of Health.

216. American Cancer Society, State Medical Society, State Health Department.

248. American Cancer Society, State Medical Society, State Health Dept.

274. Saranac Lake Medical Society, The American Trudeau Society, Adirondack Counties Chapter of the New York State Academy of *General Practice.*

285. University of Pennsylvania Graduate School, Delaware *Academy of General* Practice.

286. The Commission on Graduate Education, Medical Society of the State of Pennsylvania.

297. American College of Chest Physicians in conjunction with the *Pennsylvania Academy of General Practice.*

315. Lone Star Medical Association, Texas Tuberculosis Association, Prairie View Agricultural and Mechanical College.

328. American Trudeau Society, in cooperation with The Massachusetts Tuberculosis and Health League, Harvard Medical School, Harvard School of Public Health, Boston University School of Medicine, Tufts College Medical School.

Prerequisites

322. 1 yr. internship in general hospital and 2 yr. residency in psychiatry and license.

323. 1 yr. internship in general hospital.

329. M.D. degree from approved medical school and *internship.*

331. Selected by committee on admissions on basis of credentials.

333. 1 yr. formal training or practice.

335. 2 yr. formal training or practice.

337. 2 yr. postgraduate.

339. 3 yr. psychiatric training.

345. 1 yr. psychiatric residence and 1 yr. personal analysis.

346. 2 yr. psychoanalytic training and 1 yr. psychiatric residency.

349. M.D. degree.

351. 2 yr. psychiatric residence plus 3rd yr. before graduation.

354. AS-6: see course 618.

355. A-1, AS-1, A-2 or A-4, A-3, AS-3, AS-6, A-8 or A-9: See 613-616, 618, 620.

357. Acceptance by course director.

360. Graduates in medicine.

375. Doctors with internship and 1 yr. accredited residency in psychiatry.

377. Graduates in medicine; undergraduates who have completed 1 yr. of medical course.

380. Graduate from grade A school, approved internship, under age 40.

396. Degree in arts, science, or medicine, adequate background in physics, chemistry, and biology.

397. Degree in arts, science, or medicine; adequate background in physics, chemistry, and biology, including comparative anatomy or human anatomy and two foreign languages.

401. Basic courses: see 613, 616, 618, 620.

402. Candidate for certificate.

403. Candidate must be in supervision.

404. Decided individually at discretion of American Board in Psychiatry.

405. Matriculated student.

412. Certification as practicing psychoanalyst.

415. Resident of Jefferson-Hillman Hospital.

416. Residency and limited practice.

418. 1 yr. basic science training.

419. 2 yr. graduate training in the specialty.

421. M.P.H. degree.

424. M.D or A.B. or B.S.

432. Qualified psychiatrist.

434. Candidates for American Board of Surgery and F.R.C.S. (C) (Royal College).

435. Exam. American Board of Internal Medicine and F.R.C.P. (C) (Royal College).

436. Candidates for American Board of Obstetrics and Gynecology and F.R.C.S. (C) (Royal College).

439. 1 yr. rotating internship.

441. Graduate of an approved medical school.

443. Rotating internship, 3 yr. postgraduate training.

447. M.D. or other professional training, with experience in field of public health.

449. M.D., M P.H., and departmental invitation.

450. 2 yr. of psychoanalysis.

451. Enrollment in professional school course in institute.

Academic Degree Given

334. Doctor of science in industrial medicine.

336. Master of industrial medicine.

341. Master of public health.

343. Doctor of public health or doctor of philosophy.

374. Psychoanalyst.

388. Diploma of doctor of public health.

391. Bachelor of science (medical).

398. Doctor of science in hygiene.

400. Master of medical science.

420. Doctor of public health.

422. Diploma of doctor of medical radiology.

423. Master of science.

440. Diploma of doctor of industrial hygiene.

442. Master of surgery.

446. Diploma of doctor of psychiatry.

Miscellaneous:

5. Certificate given.

16. Examination given.

37. *Course immediately precedes 4th Western* Cardiology Conference (P-01255). Arrangements for joint registration may be made.

65. Course immediately precedes P-01285, "Electrolyte and Fluid Balance." Arrangements may be made to register for both courses at reduced tuition.

66. One day will be devoted to each of the following areas: internal medicine, pediatrics, surgery, obstetrics and gynecology, psychosomatic medicine and psychiatry, and general medicine. Arrangements may be made to register for single days.

67. Fee for academy members, $10; nonmembers, $20.

74. No fee to members.

99. Course designed for specialists in internal medicine for part 1 and for general practitioners for part 2.

104. Open only to foreign physicians.

105. Monthly.

138. First 3 days, otolaryngology; last 3 days, ophthalmology.

139. $75 for whole course, $40 for either part.

143. Course is accepted for credit by American board in that specialty.

158. All courses given in the evening with the exception of supervision and training analyses. Time for these courses is arranged individually.

166. No charge for residents in radiology or members.

172. No charge for physicians and interns.

179. Associate members, $25.

184. This course, sponsored by the Los Angeles *County Heart Association, consists of a single* 3 hr. laboratory session. Courses are given weekly throughout the year.

189. Alumni, $35.; nonalumni, $100; incoming students free.

213. Fee for members, $35; nonmembers, $50.

241. Nonmembers, $60.

246. $40, association members; $75, nonmembers.

254. The instructor will lecture in each of 5 teaching centers one night a week and repeat the circuit for 10 weeks.

268. Tuition fee: 1st mo., $150; 2nd mo., $75; 3rd mo., $50; 3 following months, $25 each; 1 yr., $450.

273. Additional 6 mo. may be given.

281. Fee paid by North Carolina Health Dept.

284. $5 registration for nonmembers of the American Academy of General Practice.

289. Members only.

298. Tuition for physicians in Oregon is paid by the Oregon Division of the American Cancer Society, and that for physicians in Idaho and Alaska is paid by their local cancer division.

319. Presented by United States Chapter, International College of Surgeons, in cooperation with Cook County Graduate School of Medicine.

324. This course is set up to provide residency training for the physician who is not eligible for a hospital residency because of noncitizenship or other similar reasons.

330. $300 for 6 mo.; $600 for 12 mo.

348. Fee: 1st yr., $500; 2nd yr., $300; 3rd yr., $200.

358. Fee: 6 mo., $500; 12 mo., $1000.

389. Parts of this course may be taken as follows: Basic Sciences in Ophthalmology, 9/26/55-1/20/56; Introduction to Clinical Ophthalmology, 1/23/55-3/3/56.

390. Parts of this course may be taken as follows: Histopathology of the Ear, Nose and Throat, 10/31/55-11/26/55; Anatomy of the Head and Neck, 11/28/55-1/28/56; Audiology, 1/30/56-2/11/56; Anatomy of the Temporal Bone, 2/13/56-3/24/56.

394. $30, members; $60, nonmembers.

399. Affiliated with University of Pittsburgh, Pittsburgh.

409. Fee: $10, residents; $25, practicing physicians.

426. In this course there are 960 hr. plus 3 mo. field work. Less for holders of D.P.H.

427. Residents, $52; nonresidents, $167.

428. Residents, $28; nonresidents, $79.

429. Residents, $28 or $79; nonresidents, $41 or $119.

430. This is a combination course given by the University of Colorado School of Medicine *and Fitzsimons General Hospital.*

431. Residents, $41; nonresidents, $119.

437. Resident, $170; nonresident, $380.

444. Thesis, fellowship in surgery.

452. In this course there are 4 yr. of lectures, seminars, and preceptor sessions (4th yr. courses are elective) as follows: 1st yr., 116 hr.; 2nd yr., 88 hr.; 3rd yr., 103 hr.; 4th yr., 39 hr. The hours of clinical work are in addition to the above.

453. In this course there are 4 yr. of lectures and seminars as follows: 1st yr., 60 hr.; 2nd yr., 60 hr.; 3rd yr., 36 hr.; 4th yr., 66 hr. The hours of field and clinical work are in addition to the above.

MEDICINE AND THE LAW

HOSPITAL STAFF PRIVILEGES CONTINGENT UPON MEMBERSHIP IN COUNTY MEDICAL SOCIETY

The courts have consistently held that the governing body of a public hospital may adopt rules and regulations that are reasonable, that tend to promote efficiency in the running of the hospital, and that are necessary in order that the hospital may better carry out the duties and obligations that it owes to the public.[1] Under this power to prescribe reasonable rules and regulations, it has been held that the governing board of a public hospital may refuse to allow a duly licensed physician and surgeon to practice his profession in the hospital. Such an exclusion must not, however, be based on grounds that are unreasonable, arbitrary, capricious, or discriminatory.[2] The one known exception to this rule occurred in a recent case decided by the Michigan Supreme Court[3] relating to the right of a governmental hospital to determine which physicians might or might not use its facilities. This case was discussed in detail in this column in the April 9, 1955, issue of THE JOURNAL.

In recent years there has been an increasing number of cases before the courts in which the issue was the reasonableness of a particular rule or regulation of the governing body of a public hospital under which a duly licensed physician was excluded from the hospital. Rules excluding osteopathic physicians from public hospitals have been held reasonable on the ground that in the management of a hospital some choice in methods of treatment would seem inevitable.[4] A rule has been held reasonable,[5] which provides that a physician, in order to engage in surgery, must, in addition to being licensed by the state, have had one year of service as an intern in an approved hospital and three years of surgical training that meets the approval of the American College of Surgeons. Also held reasonable was a rule providing that in order to be allowed to perform major surgery in the hospital, the physician had to meet the probationary requirements prescribed by the American College of Surgeons.[6] A rule requiring membership in the county medical society as a condition of being allowed to practice has been held unreasonable.[7] The exclusion of physicians from a public hospital on the sole ground that they were practicing contract medicine has been held to be arbitrary and capricious.[8]

The most recent case with respect to the question of the reasonableness of a particular regulation of the governing board of a public hospital under which a physician was excluded from the hospital was decided by the Supreme Court of Arkansas on June 13, 1955.[9] The plaintiff physician was denied admission to practice in the Ouachita General Hospital, a county hospital supported by public funds. The defendant board of governors of the hospital denied him admission on the ground that he was not a member of the Garland County Medical Society as required by article 5 of the bylaws of the hospital. The plaintiff physician brought his action to enjoin the board of governors from further denying him staff privileges and use of the hospital's facilities. While the action was pending, the board of governors amended article 5 of the bylaws of the hospital so as to make the approval and recommendation of the Garland Medical Society a prerequisite for use of the hospital facilities as a physician instead of the former requirement of membership in the society.

The plaintiff was duly licensed to practice medicine in Arkansas and had practiced in Hot Springs since 1937. During the past 15 years he had made 12 applications for membership in the Garland County Medical Society. Each time his application was rejected without any reason indicated. It was admitted that the plaintiff was excluded from the hospital solely on the grounds that (1) he was not a member of the Garland County Medical Society and that (2) he did not have the approval and recommendation of that society.

The court accepted the general rule that a public hospital may enact rules and regulations applicable to all physicians and surgeons alike that bear a reasonable and fundamental relation to the safety, interest, and welfare of patients and the general public but that its governing authorities cannot exclude a physician by rules and regulations that are arbitrary and capricious. The court, citing in support of its position *Hamilton County Hospital* v. *Andrews*,[10] found that the bylaw in question did not bear a fundamental relation to the safety, interest, and welfare of patients and the general public. The court said that the fact that the board of governors, which was composed entirely of businessmen rather than medical men, needed a group to whom they could turn for advice in considering applicants for staff membership was not sufficient to make the bylaw reasonable. They may consult with and get advice from medical and hospital groups, including county medical societies, in the formulation of rules that bear a reasonable relationship to public safety and welfare, but the rules formulated on the advice of these groups cannot be arbitrary. The rule here in question is arbitrary because the medical society is a private organization whose membership may bestow or withhold approval of a fellow physician's application for a valid reason or for no reason at all. The court stated that as affecting validity, it could perceive "no material difference between a rule that makes membership in a medical society a prerequisite to staff privileges and one that requires approval and recommendation by the membership of said society. An organization that has consistently refused a physician membership over a period of 15 years without any announced reason would hardly be expected to approve and recommend such a physician to staff privileges in the hospital. The membership of a society that would reject the application for membership in the first instance would in all probability withhold its approval in the second instance. It would be contrary to human nature to . . . [suppose] that they would do otherwise."

Counting the subject case there have been only two cases[11] that have passed squarely on the question of whether membership in a county medical society can be made a prerequisite to staff privileges in a public hospital, and both cases have held that such a regulation is arbitrary, capricious, and discriminatory. The point was raised in a third case,[12] but the court deemed it unnecessary to pass on the question since it had declared invalid the rule of the medical society under which the physicians had been denied membership in the society; however, the tenor of the court's opinion is such as to indicate that it would have found the regulation, making society membership a prerequisite to staff privileges in a public hospital, unreasonable. There is also a case[13] involving a private hospital in which it is indicated that membership in a medical society can be made a prerequisite to staff privileges in a private hospital. This is in accord with the established rule that the governing body of a private hospital has an unlimited power with respect to prescribing rules and regulations as to the qualifications and responsibilities of its staff members.[14] Although there have been only these few cases involving the problem, it appears that so long as a county medical society continues to be regarded as a purely private association, with the sole power of determining what persons it will admit to membership, a regulation, such as the one in the present case, will be regarded as arbitrary and unreasonable.

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[1] *Hayman* v. *City of Galveston*, 273 U. S. 414 (1927). *Findlay* v. *Board of Supervisors of the County of Mohave*, 230 P. (2d) 526 (Ariz., 1951). *Hamilton County Hospital* v. *Andrews*, 84 N. E. (2d) 469 (Ind., 1949). *Green* v. *City of St. Petersburg*, 17 So. (2d) 517 (Fla., 1944). *Memorial Hospital of Sheridan County* v. *Pratt*, 262 P. (2d) 682 (Wyo., 1953).

[2] *Findlay* v. *Board of Supervisors of the County of Mohave*, 230 P. (2d) 526 (Ariz., 1951). *Group Health Cooperative of Puget Sound* v. *King County Medical Society*, 237 P. (2d) 737 (Wash., 1951).

[3] *Albert* v. *Board of Trustees of Gogebic County Public Hospital*, 67 N. W. (2d) 244 (Mich., 1954).

[4] *Hayman* v. *City of Galveston*, 273 U. S. 414 (1927). *Richardson* v. *Miami*, 198 So. 51 (Fla., 1940). *Newton* v. *Board of Commissioners of Weld County*, 282 Pac. 1068 (Colo., 1929).

[5] *Hamilton County Hospital* v. *Andrews*, 84 N. E. (2d) 469 (Ind., 1949).

[6] *Green* v. *City of St. Petersburg*, 17 So. (2d) 517 (Fla., 1944).

[7] *Hamilton County Hospital* v. *Andrews*, 84 N. E. (2d) 469 (Ind., 1949).

[8] *Group Health Cooperative of Puget Sound* v. *King County Medical Society*, 237 P. (2d) 737 (Wash., 1951).

[9] *Ware* v. *Benedikt*,—— S. W. (2d)——(Ark., 1955).

[10] 84 N. E. (2d) 469 (Ind., 1949).

[11] *Ware* v. *Benedikt*,——S. W. (2d)——(Ark., 1955). *Hamilton County Hospital* v. *Andrews*, 84 N. E. (2d) 469 (Ind., 1949).

[12] *Group Health Cooperative of Puget Sound* v. *King County Medical Society*, 237 P. (2d) 737 (Wash., 1951).

[13] *Weyrens* v. *Scotts Bluff County Medical Society*, 277 N. W. 378 (Neb., 1938).

[14] *West Coast Hospital Association* v. *Hoare*, 64 So. (2d) 293 (Fla., 1953).

MISCELLANY

THE OUTLOOK FOR SOCIAL SECURITY

A. L. Kirkpatrick

The following article appeared in more detail in the October-November, 1954, issue of American Economic Security. *It is reproduced with the permission of the editor and author.*—Ed.

The great issue of our time—the great basic struggle which underlies most of the apparent disturbances in the world today—is the struggle for the freedom of the individual from domination by others. Men everywhere are striving to assert their God-given right to govern their own lives, make their own decisions, possess property of their own, work at a job of their own choosing, retain the major part of the fruits of their own production and to provide for their own security. Along with the desire for freedom is the almost universal desire for economic security.

It is important to recognize that real security, even economic security, involves a large measure of faith and reliance upon God as the Creator and Governor of His Universe. When individuals, under God's guidance, rely on their own efforts and voluntary private means of providing security, it is attainable, not only without sacrifice of freedom, but actually with greater freedom of thought and action. But the temptation is strong to sacrifice freedom to government or anyone who holds a reasonable promise of a secure income for the future. When the promise offers security for little or no effort on the part of the individual, the temptation becomes very appealing.

FEDERAL SOCIAL SECURITY SYSTEM

Our system of federal social security offers millions of individuals substantial incomes in their later years and that government, or that political party which promises the most liberal benefits for the least cost feels that it has a powerful weapon with which to get and retain itself in power. It is extremely important, therefore, that this system be subjected to periodic review.

The Congress has just enacted extensive amendments to the Social Security Act. It has increased the level of benefits, raised the tax base, added a "freeze" of benefit rights during permanent and total disability and extended coverage to about 10 million additional persons. But at no time since the passage of the law in 1935 has Congress given adequate consideration to any study of what the law should do, what it has accomplished and where it is leading us.

The Senate in 1950 authorized its Finance Committee to make such a study at the same time it increased the benefits and launched the "new start." In fact, the promise to study the system was regarded by some as almost a condition for the passage of the benefit improvement bill. But the study was never made. Nobody seemed to have any stomach for the task. In 1953 the House of Representatives authorized its Ways and Means Committee to make such a study. Congressman Carl Curtis headed the subcommittee which conducted the most thorough-going examination which has yet been made. But its findings and recommendations were almost totally ignored by the House and Mr. Curtis' bill was side-tracked for another which closed its eyes to the present defects of the system. The 1954 Amendments continue the building-up process which has been going on for the last seventeen years without a soul-searching review.

EXPANSION OF THE SYSTEM—1937 TO 1954

Let's look at what has happened since the original law was enacted in 1935. First, benefit levels have been successively increased. The initial current maximum payable to a single beneficiary has risen from $25 in 1935 to $108.50 in 1954. The minimum benefit has been increased from $10 to $30 per month. Benefit payments were to have started in 1942, but in 1939 the date was advanced to 1940.

While the Act at first provided only a retirement income for the worker, plus a cash death benefit to the widow, the 1939 Amendments added a system of dependent and survivor benefits which took the system all the way into the field of life insurance protection. In 1949 the bill passed by the House included permanent and total disability benefits but the Senate bill and the final bill excluded this provision. A disability "freeze" was actually written into the 1952 Amendments but was nullified by another amendment. The recent 1954 Amendments actually puts the "freeze" provision into effect.

The rate of taxation started in 1937 at 1% of payroll for employee and employer and was to have increased by 1% each three years to a maximum of 3%. But Congress acted in 1939 to defer the increase until 1943. Further deferments actually postponed the increase until 1950 when the rate went to 1½%. In 1954, it was increased according to schedule to 2% for employee and employer with the maximum of 4% each now written into the law. The tax base, too, has been increased from its original $3,000 of payroll to $3,600 in 1950 and to $4,200 in the 1954 Amendments. This is a substantial shift in the incidence of the tax to the higher incomes where protection is less needed.

The provision for federal grants-in-aid to the states for old-age relief, which gave the general impression that it was adopted originally as a temporary stop-gap and intended to be sloughed off as the direct payment system took in more and more beneficiaries, has continued in full force and with increasing rather than decreasing amounts. In 1953 federal grants to the states under the Old-Age Assistance program totaled some $900 million. This compares with $119 million in 1937. So we see that the pattern of our social security system during its eighteen years has been one of constant expansion into the area where the federal government takes over more and more of the responsibility for the well-being of its individual citizens.

THE FORCES AT WORK

What are the forces behind this trend? Where will it end? Is it a good thing for the long-range good of the country? The answers to these questions are not easy. We can only judge on the basis of the past record and our present evaluation of them. One of these forces is a strong pressure being exerted through the labor unions and numerous groups organized mainly for the purpose of pressing for federal government largess for, and control over, the lives and well-being of individual citizens. Another factor is a widespread apathy and a lack of understanding of the social security system—its basic philosophy, how it really works, and what its ultimate costs may be. Apathy and ignorance are not forces. Rather, they are vacuums which permit active forces to move in and that is about what has been happening in social security.

Contributing to this indifference is the fact that social security is not an attractive, or even an interesting, subject to the average businessman. He instinctively abhors and shrinks from the idea of a compulsory federal welfare system. He would prefer not to hear about it, let alone study it and work to terminate its evils and put it on a sound basis. He would prefer, if left to his own desires, to close his eyes and ears to what is going on in social security and hope that somehow its evils and abuses would go away. The result has been that the champions of government largess are crusading for a cause where there are few defenders of a sound economy. For the most part, even these few defenders are not well organized, many of them are only partially informed and are without enthusiasm for their cause. Also, it has been quite easy for the welfare advocates to confuse the real nature of the social security system, how it works, its cost and its rapidly accumulating liabilities. This is done by the use of misleading terms. For example, calling it "insurance," speaking of "coverage" and telling its beneficiaries, "you've paid for it, it's yours as a matter of right." How far from the real facts these terms are.

ENCROACHMENT ON PRIVATE LIFE INSURANCE

Still another reason for the relatively easy extension of the program up to date is the fact that many life insurance men apparently became convinced that it was a good thing for private life insurance and stimulated its sale. Agents found it easy to get into an interview by asking the prospect if he would like to know how much his social security pension will be. But the figures don't bear out that conclusion. The assets of the life insurance companies at the end of 1953 were 2.7 times what they were at the end of 1937 when the Social Security Act became effective. The increase is from $29,243,000,000 to $78,533,000,000. Life insurance premiums [almost tripled] in that period, from $3,776,000,000 to $10,847,000,000. Those are very impressive gains. But it must be remembered that, in that period the purchasing power of the dollar has dropped to roughly half its 1937 value, the population and the productive capacity of our people have, on the other hand, increased.

The Gross National Product of the country for 1953 was over 4 times what it was in 1937, increasing from $90 billion to $367 billion, and personal consumption expenditures [more* than tripled,] rising from $67 billion to $230 billion. In other words, the amount of money going into private life insurance has not kept pace with the growth of the country in spite of the impressive gains which its figures show. During that period federal government "life insurance coverage" as represented in the social security system, approached the total life insurance in force in all private companies and went beyond in 1952. With the 1954 Amendments the social security "insurance" coverage exceeds the private volume in about the ratio of 4 to 3. The amount of pensions in force under social security are estimated at roughly ten times the annuity business of the private companies.

PRESENT BENEFITS PAID BY FUTURE GENERATION

Still another reason for the easy expansion of the federal benefit system is because the plan has been so developed that the tax burden falls very lightly on the present generation of workers and voters. We have the unique situation of the present generation legislating one rate of taxation for ourselves today and a progressively higher rate of tax on the next generation to whom we look to pay our old-age benefits.

ULTIMATE END—CRADLE-TO-THE-GRAVE

Where will it end? Are we to see a continuous year-after-year increase in benefit levels, raising of the basis of tax incidence into the higher brackets and the addition of more and more kinds of benefits? I think there is really no question about the ultimate end. The only question is how fast will the rate of progress be made or what can be done to make the Congress face up to the real cost of these benefits. The ultimate goal, advocated by our national labor organizations may be the program embodied in the "Minimum Standards for Social Security" convention adopted at the annual meeting of the International Labor Organization in Geneva in 1952. They are:

1. Old-age and survivor benefits which we already have in this country. The amount of benefits, however, would provide a comfortable living rather than a mere subsistence level to be supplemented by individual efforts;
2. Permanent and total disability benefits;
3. Weekly benefits for unemployment from any cause, whether inability to secure a job, sickness or accident either occupational or non-occupational. This means, of course, the socialization and nationalization of our present workmen's compensation system;
4. Maternity benefits;
5. A monthly payment to each family for each dependent child;
6. A lump-sum job separation payment; and
7. National compulsory health insurance or socialized medicine.

That is the program. In 1952 the labor delegate from the United States and also our government delegate to the ILO voted for it. Our employer delegate alone voted against it. In past years, officials of our social security system and our federal Department of Labor have been active in the ILO movement to get this program adopted, in whole or in part, in all countries of the world.

WHAT WOULD IT COST?

What would such a system of benefits cost? How much of a burden would it put upon our productive machinery? In South America some countries have much of the ILO program already in effect, and their tax rates are as high as 25% of payroll. In France, the tax rate is 35% of much of their payroll and is one of the principal reasons for the failure of the French economy to make a post-war comeback.

Benjamin Kendrick, Research Associate for the Life Insurance Association of America, and a recognized authority in this field, in a public address not long ago, estimated the ultimate cost of the whole program, if put into effect in this country, would be 30% of payroll as a minimum and could cost as much as 40% of taxable payroll.

WHAT'S AHEAD?

What's ahead? What do the advocates of individual responsibility for one's own welfare need to do to put a stop to this unwarranted abuse of the taxing power of government? To put it broadly, it seems obvious that we need to reform our ranks, review both our defensive and offensive strategy and to launch an action program aimed to awaken a sleeping population to what is going on largely unknown to it. At least many people appear to have no conception of the long-range implications and cost of the program that is being gradually projected upon them.

We are living in what Sir Winston Churchill might call an attempted state of "peaceful coexistence" with the welfare pressure groups, with the forces which are seeking to make the individual subservient to government. But Sir Winston also pointed out that any attempt at "peaceful coexistence" with aggressors must be "vigilantly guarded." The businessmen of the country, years ago, accepted our national old-age and survivorship program as a basic part of our economic system, on the premise that it's benefits should be kept at a "minimum level." In the light of the pressures which have developed for more and higher benefits and the relative ineffectiveness of the resistance to this expansion, many are now wondering if they made a mistake in agreeing to "peaceful coexistence."

THE TRAGEDY OF THE OLD FRATERNAL ASSESSMENT INSURANCE PLANS

Some years ago, the fraternal societies of the country were forced to liquidate their early assessment life insurance plans which ended in such tragedy for their longest-lived members and their beneficiaries. The actuaries know the story quite well. Many old time life insurance men remember the cases of policyholders in these assessment plans who paid premiums for many years, only to find that, in their old age, the premiums they had been paying were hopelessly inadequate and that they must now either pay a premium which was virtually prohibitive or expect a greatly reduced payment at the maturity of the policy.

How did this happen? Because the fraternal societies failed to understand the accumulating liability of benefits payable to an aging population. When the lodge members were young men and women, the mortality rate was very low and the cost of insurance was low. But as they grew older, the mortality rate increased and the demands against the funds of the society increased until, finally, they were unable to meet them and were forced to reorganize. The older policyholders lost a large part of their insurance after paying premiums for many years.

Our national old-age and survivorship system is working in much the same way. It was designed to collect taxes from all workers in the covered classes, but to pay benefits in the early years to only a very few. At the beginning of the plan in 1937, taxes were collected from some 32,000,000 persons. But benefits were not commenced until 1940 and, then, were paid only to a part of those taxpayers who had reached age 65. The first year, payments were made to only some 222,000 persons.

FEW ELIGIBLE FOR BENEFITS IN EARLY YEARS

As with the fraternal plans, very few of those covered by social security became eligible for benefits in the early years. But the liability of the system to a slowly aging population continued to creep up year by year. This fact is fully understood by the actuaries but by very few others. The failure to understand this point has accounted, in large measure, for the general public misunderstanding of our system, how it is working and what its real cost is.

With private insurance, every policyholder pays his proportionate share of the total cost of benefits. For a private inurance company to commence paying an annuity of $100 a nonth to a person aged 65, the company must have in hand ome $12,000 to $15,000. That is the "cost" of the benefit.

NOT REALLY "INSURANCE"

With our social security system, the "cost" of benefits is no lifferent than if paid by a private company. The main difference s that our system is depending largely upon its ability to collect axes from the working population of future years. Actually, nstead of our system being an "insurance" system in which ach participant pays the cost of his own benefits, we have a lan in which the working population pays taxes into the fund o be used for the payment of benefits to the non-working aged opulation.

With few, if any, exceptions, every one who is presently reeiving an old-age pension under the social security system has aid for no more than about 5% of the actual cost of his penion. The employer and employee contributions together have iot ordinarily paid for more than 10% of the cost. On the verage, employee taxes have paid for approximately 2% of the ost of their pensions and, together with their employers, they ave paid for approximately 4% of the cost.

The remaining 96% of benefits has been paid, and is being aid, out of the taxes of the present workers. The pensions to hese present workers, in turn, will have to be paid for by the axes of the next generation of workers. While the system has ccumulated a small excess of income over outgo leaving a eserve fund of some $19 billion, the experts indicate that this s not enough to pay the rest of the benefits to those now reeiving old-age pensions and that the accumulated and unisclosed liability for pensions to all those who have paid taxes, mounts to more than $200 billion.

NEED TO PRESENT THE TRUTH

It has been apparent to close students of our federal social ecurity system that some change in the present mechanism is ecessary in order to show plainly to the entire country what he real cost of the existing level of benefits is and then, to have he present generation of the working population pay the full ost of the system in the same way we expect the next generation o pay its cost.

Those who fully understand the system and honestly want to ace the facts don't want to see the country disillusioned some ears hence as were the policyholders and beneficiaries of the ld fraternal societies. Some of the original planners of our resent system now are convinced that, had they known seveneen years ago what they have learned from actual experience ith its operation, they would have insisted upon a somewhat ifferent plan of financing.

On the other hand, there is reason to believe that some of e other planners seized upon the present mechanism for the eliberate purpose of concealing its true cost for many years order to enable them to foist a much greater federal system n the country before the people woke up to its real nature and ost. . . .

WHAT NEEDS TO BE DONE?

In all frankness, it must be admitted that even if nothing is one to resist the trend, even if it is allowed to proceed year fter year unopposed, it may have little adverse affect on most dult citizens. In fact, the further and faster it moves, the bigger enefits elderly individuals will collect when they reach 65. And he effect will scarcely be felt in the tax load which most of em will pay. That is to say, the 1954 Amendments, while inreasing the benefit level, also spread out the tax load and deyed the need for facing up to real costs. It seems likely that ost individuals who are now 45 or over will probably reap e benefits without the deficits from these changes. It will be 0 or 50 years before the system has reached complete maturity nd the real cost laid before the taxpayers of that day.

It does seem somewhat ridiculous and selfish to have the resent generation of employed persons under 65, who constitute e majority of the voters of today, voting larger and larger enefits for themselves, with any one individual and his emloyer so far having paid only 10% or less of the actual cost f the benefits he will get when he retires, and deferring the real ost to the working population of the next generation.

It seems a little incongruous for our Congressmen of today to write into the tax law rate graduate up to 4% each on the employer and employee of 20 years from now in order that they may pay benefits to many of those who paid only 1% each, and for a time 1½% each. I wonder what the attitude of the next generation of taxpayers will be? Will they pay the bill or will they find some scheme for avoiding that burden as we have done?

MEDICAL FILM REVIEWS

Ocular Bacteriology: Its Application to Clinical Practice: 16 mm., color, sound, 40 minutes. Sponsored by Alcon Laboratories, Fort Worth, Texas. Produced in 1954 by and procurable on loan from Medical Film Guild, Ltd., 506 W. 57th St., New York 19.

This film is a clinical symposium on the bacteriology of the eye. It consists of a panel discussion by the following persons: James H. Allen, Tulane University, moderator; Trygve Gundersen, Boston University; Phillips Thygeson, University of California; Hugh Ormsby, University of Toronto; Alson E. Braley, University of Iowa; Michael J. Hogan, University of California; and Gustav C. Bahn, Tulane University. The most important aspect of the film is its plea for recognition of the diminishing effectiveness of antibiotics in the treatment of infections of the eye. It urges the inclusion of bacteriological studies in the routine examination of every patient with inflammatory or infectious disease of the eye. The purpose of this rather long film is to emphasize the importance of specific diagnosis and ocular bacteriology in external ocular diseases. The general technique for taking a culture, plating the material, doing sulfonamide and antibiotic sensitivity tests and a few examples of morphology of conjunctival smears are presented effectively. Several types of external ocular infections are presented as illustrations of occasions when the making of a bacteriological culture and smear would be of diagnostic value. The quality of photography and the presentation are excellent; however, the voices of various members of the panel reproduce very poorly. It is somewhat difficult to decide at what type of audience this film is directed. It would emphasize to the general practitioner the importance of ocular bacteriology in making accurate diagnoses of external ocular inflammations; however, the general treatment of the subject, as to both the comments of the panel and isolated examples of many different types of external ocular infection, was superficial and would be of little interest to the average ophthalmologist. To an ophthalmologist with satisfactory previous training, a more thorough demonstration of fewer conditions with greater details of technique and findings would probably be of greater interest.

Cancer of the Urinary Bladder: Kinescope No. 23. 16 mm., color, sound, showing time 47 minutes. Prepared by Willet F. Whitmore, M.D.; Victor F. Marshall, M.D.; and James L. Green, M.D., Memorial Center for Cancer and Allied Diseases, New York. Produced in 1954 by and procurable on loan from American Cancer Society, 521 W. 57th St., New York 19.

This film was originally produced for closed-circuit television. The significant signs and symptoms and the techniques used in differential diagnosis of cancer of the bladder are described. Therapeutic approaches, including the rationale of radical surgery, are reasoned through. Clinical case histories, descriptions of gross and microscopic pathology, results of varied treatments, preoperative evaluation procedures, techniques of postoperative care, and the rehabilitation of patients after extensive surgery are all defined. There is a discussion of the incidence and location of bladder tumors and a discussion of urographic findings in a patient with carcinoma of the bladder. A very strong plea is made to the general practitioner for the early recognition of the symptoms of bladder tumors. The material is presented in a very clear, concise, factual, and well-organized manner. The dialogue is very good. Charts and diagrams are clear and effectively presented. This film is highly recommended for general practitioners and would also be of value in teaching residents, interns, and medical students.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Cardiac Rupture: Report of 12 Cases from the Southern Baptist Hospital, New Orleans, During a 10 Year Interval. S. H. McDonnieal Pr., M. Humbrecht and N. W. Voorhies. J. Louisiana M. Soc. **107**:171-177 (May) 1955 [New Orleans].

Of 1,315 consecutive autopsies performed at the Southern Baptist Hospital in New Orleans between 1944 and 1953, acute myocardial infarction was found as the cause of death in 114. Cardiac rupture had occurred in 12 of the 114 cases, an incidence of 10.5% of all acute infarcts, in which autopsy was performed. Of the 12 patients between the ages of 54 and 85 years with cardiac rupture, 8 were women and 4 were men. The higher relative incidence of spontaneous cardiac rupture, as compared to that of acute myocardial infarction in women, may be attributed to the lower incidence of coronary disease and the higher incidence of hypertension among women. In none of the patients was the diagnosis of cardiac rupture made before death, although it was suspected at the time of death in two. Cardiac rupture occurred within four days of the onset of the infarct in eight patients (66.7%), on the fifth day in one, and on the 12th and 14th days in one each; no history of the onset of the infarct was available in one patient. The time of rupture in the authors' patients followed the same pattern as that reported by other workers. Since most ruptures occur within the first week and nearly all within the first two weeks, and since the incidence of rupture is increased by unrestrained activity, the physician is justified in insisting on at least three weeks of complete rest. This would apply equally to the so-called small infarct, particularly when the blood pressure remains high after infarction. Only one of the 12 patients received anticoagulant therapy, and only a single dose of ethyl biscoumacetate (Tromexan) three hours before death. Consequently, no conclusions can be drawn from the authors' series concerning the possible effect of anticoagulants on cardiac rupture, but reports by other workers suggest that anticoagulants carry a definite risk in addition to the systemic effects of the drugs. The occurrence of cardiac tamponade, as well as the increased frequency of rupture, limits the usefulness of anticoagulants in the care of the patient with acute myocardial infarction.

The Effects of 1-Hydrazinophthalazine upon Coronary Hemodynamics and Myocardial Oxygen Metabolism in Essential Hypertension. G. G. Rowe, J. H. Huston, G. M. Maxwell and others. J. Clin. Invest. 34:696-699 (May) 1955 [New York].

Six patients with essential hypertension were given 11 to 20 mg. of 1-hydrazinophthalazine (Hydralazine) hydrochloride, and five hypertensive patients serving as controls were given 1 cc. of sodium chloride solution. Various cardiac functions were determined before and after "treatment." In comparison with the results in the controls the hemodynamic changes that occurred after the administration of Hydralazine included an increase in heart rate, a fall in systemic blood pressure and peripheral arterial resistance, a decreased arterial and mixed venous carbon dioxide content, and a smaller arteriovenous carbon dioxide difference. Total body carbon dioxide production and oxygen consumption were unchanged, and the respiratory quotient was constant. Hydralazine produced an increase in coronary blood flow in five of the six patients to whom it was given, the over-all increase being 34%. Simultaneously, with the decrease in perfusion pressure, the coronary vascular resistance was decreased 35%. The increased coronary blood flow was accompanied by a 27% decrease in the arterial-coronary sinus oxygen difference caused by an 81% increase in the coronary sinus oxygen content. The cardiac rate of oxygen consumption remained unchanged. Hydralazine thus decreases coronary vascular resistance to such a degree that an increase in flow occurs despite the reduced prefusion pressure. Simultaneously, as arteriovenous oxygen difference across the myocardium narrows, left ventricular oxygen consumption per 100 gm. is unchanged.

Some Observations on the Epidemiology of Lung Cancer. R. Fowler. M. J. Australia **1**:485-494 (April 2) 1955 [Sydney, Australia].

An isolated inquiry has been made in the last 10 years in order to compile and analyze data regarding patients with cancer at six public hospitals in Melbourne, Australia. A summary of this inquiry discloses that admissions for bronchial cancer have more than trebled in the last decade. Throughout the series the ratio of male to female patients has never been less than 4:1. At the same time the ratio of patients with bronchial cancer to all patients with cancer has increased from 1:38 in 1940 to 1941 to 1:15 in 1952 to 1953. Since the case fatality rate of lung cancer is practically 100%, it can be seen that, except for an indeterminate time lag between the onset of disease and death, the long-term trend of mortality may be used as a measure of the incidence of lung cancer. A synopsis of Australian mortality data for primary growths of the lung reveals a great increase in the number of deaths ascribed to cancer of the lung in the last 40 years. By 1950, physicians in Australia were writing "cancer of the lung" on death certificates about 27 times more often than in 1910. Statistical analysis of the Australian death rates appears to indicate that: (1) the frequency of occurrence of bronchial cancer has undergone a marked increase in the last 40-odd years; (2) the incidence of this disease has increased by a more or less constant percentage each year; and (3) the uniform pattern of increase has been slightly disturbed by irregular deviations from the "normal" upward trend, but there has been no evidence of epidemic cycles. Analysis of the sex-specific time sequences discloses that, although each sequence exhibits an exponential trend like the parent series, the gradient or rate of climb is much steeper for male than for female mortality rates. The increase is about 7.7% per annum in the case of men and 4.6% per annum in the case of women. A detailed analysis of the clinical features of 1,000 case histories illustrates the difficulties of early diagnosis and the limitations of ablative surgery in dealing with the disease. The evidence from Britain and the United States of America, which incriminates smoking as a lung cancer pathogen, is regarded as convincing. The smoking habits of Australians are thought to be consistent with the theory that habitual heavy smoking is similarly blameworthy in Australia. Miners of nickel, cobalt, and uranium ores appear to be subject to special hazards. This is of interest to Australia because uranium fields are about to be exploited.

Severe Upper Gastrointestinal Hemorrhage: Early Use of Diagnostic Technics. E. D. Palmer and N. M. Scott Jr. Connecticut M. J. **19**:368-372 (May) 1955 [New Haven, Conn.].

A vigorous diagnostic approach was adopted by the authors in 163 patients with severe upper gastrointestinal hemorrhage. As soon as the patient was admitted to the emergency room, blood was drawn for cross matching, and blood replacement begun and continued as the clinical course dictated. Ice-water lavage was carried out for a half hour with a large-caliber tube using several quarts of ice-water, and esophagoscopic examination was made as soon as the tube was withdrawn. The esopha-

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The place of publication of the periodicals appears in brackets preceding each abstract.

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oscope was passed under direct vision rather than with the elp of an obturator because of the importance of inspecting he hypopharynx on the way down. Gastroscopic examination mmediately followed esophagoscopy, unless the latter showed he stomach to be refilling with blood, whereupon lavage was epeated first. Fluoroscopic examination immediately followed astroscopy, even though the bleeding lesion had already been ound. The details of diagnostic management varied to some extent from patient to patient, but in the 53 most recent cases ll diagnostic studies were completed within 24 hours of hospitalization. The examinations that were performed during emorrhage included esophagoscopy in 105 patients, gasroscopy in 136, and contrast fluoroscopy in 159. The initial mergency diagnostic studies permitted identification of the leeding lesion in 136 (83%) of the patients. As a result of successful early diagnostic efforts, 29 patients were given emerency surgical treatment during or shortly after the acute leeding episode. Of these 29 patients, 10 had duodenal ulcer, gastric ulcer, 9 esophageal varices, and 2 hiatus hernia. In rder to examine the effectiveness of this vigorous diagnostic pproach, the 163 patients were compared with 212 control atients in whom no search was made for the bleeding site until t least seven days had passed since cessation of hemorrhage, xcept that permitted during emergency laparotomy in 25 paients. The initial working diagnosis proved to be correct in only 4 (35%) of the 212 patients. Emergency therapy proved optimum in 86% of the patients with vigorous diagnostic approach s compared to 55% of the patients with delayed diagnostic pproach. The source of hemorrhage was not determined in 1% of those with vigorous diagnostic approach as compared o 15% in those with delayed diagnostic approach. There were deaths from hemorrhage among the 163 patients, a mortality ate of 4%, as compared to 18 deaths from hemorrhage among he 212 patients, a mortality rate of 8%. Nothing was observed o suggest that the vigorous diagnostic approach aggravated emorrhage or in any way compromised the patient's chance f survival. Early establishment of a precise diagnosis is important in clinical management whatever form treatment may ake, but its value is most dramatically shown when an emergency operation is required. Little weight can be placed on a history of previous diagnosis in guessing at the cause of a current hemorrhage. This mainstay of the conservative diagnostic approach proved wholly unreliable in the authors' study. Direct, on-thespot visualization of the lesion responsible for the severe upper gastrointestinal hemorrhage made it possible to direct treatment specifically. A significant reduction in mortality was achieved.

Clinical and Pathologic Difference Between Regional Enteritis and Ulcerative Colitis. E. J. Lowell Jr. J. Internat. Coll. Surgeons 23:513-516 (April) 1955 [Chicago].

Judged on the basis of general hospital admission, ulcerative colitis is from 30 to 40 times as common as is regional enteritis, and is more often encountered in women than in men. In contrast, 56% of regional enteritis occurs in men. Regional enteritis is an inflammatory disease of the small intestine characterized by abdominal cramps, diarrhea, fever, anemia, loss of weight, and anorectal complications. Ulcerative colitis is also an inflammatory disease, occurring for the most part in the large intestine characterized by bloody diarrhea, abdominal cramps, loss of weight, and anorectal complications. Enteric and abdominal fistulas are more common in patients with regional enteritis, while anorectal infections are more commonly associated with ulcerative colitis. Three prominent signs in patients with regional enteritis are a tender, fixed mass in the lower part of the abdomen; irregular fever; and negative results from sigmoidoscopic examination. Two prominent signs associated with ulcerative colitis are abdominal tenderness over the colon and positive results from sigmoidoscopic study. When present, diagnostic roentgenographic signs of regional enteritis consist of the "string sign," a distorted, narrowed, irregular lumen with loss of the mucosal pattern. In patients with ulcerative colitis, the diagnostic roentgenographic signs, when present, consist of the "lead pipe" colon, a shortened, smooth, rigid colon with loss of haustral markings. Carcinoma of the colon develops in up to 14% of patients with ulcerative colitis, whereas it virtually never occurs in those with regional enteritis. The pathological aspects of the two diseases differ even more decidedly than do the clinical aspects. The small intestine in a patient with regional enteritis is reddish-purple to grey, thickened, and suggestive of a rubber hose. The mesentery is stiff and edematous. White granular nodules may be visible, and enlarged lymph nodes palpable, in the mesentery. The opened specimen of small intestine appears cobbled, congested, and dusky red. On closer inspection longitudinal ulcerations are seen. In contrast, the colon in ulcerative colitis may show little external abnormality. Redness or spasticity may be the only external manifestation at operation. The mesentery may be normal, with few enlarged lymph nodes, unless the disease is advanced or complicated by carcinomatous change. The most striking change will be noted on examining the colonic mucosa. The entire lining often appears diffusely congested, ulcerated, and inflamed. With respect to microscopic pathological changes, the chief change attributable to regional enteritis is progressive sclerosing granulomatous lymphangitis affecting all layers of the small intestine, the lymph nodes, and the mesentery. In contrast, ulcerative colitis is restricted mainly to the colonic mucosa and submucosa.

SURGERY

Excision of an Aortic Aneurysm Adjacent to the Celiac and Superior Mesenteric Arteries: Report of a Successful Case. H. D. Sirak. Ohio M. J. 51:344-346 (April) 1955 [Columbus, Ohio].

Sirak reports the case of a man, aged 43, with a diagnosis of aortic aneurysm. The patients had been suffering from epigastric pain for eight years. At the age of 15 he had had a penile chancre, which he had treated with a salve. He had not received any other antisyphilitic treatment. Operation was performed under endotracheal ether-oxygen. Because the aneurysm was located in the lower part of the thorax and extended beneath the left diaphragm, the incision was placed in the left seventh interspace starting at the posterior axillary line and carried down onto the abdomen as a left paramedian. The aneurysm was approximately 12 cm. in diameter. It was joined to the left lateral wall of the aorta at the same level as the origins of the superior mesenteric and celiac arteries by a neck 5 cm. wide. The neck extended to a point that was 1 cm. above the left renal artery. The aorta in the immediate area of these vessels was not involved. The course of the operation, in which the syphilitic aortic aneurysm situated at the level of the celiac axis and superior mesenteric artery was successfully excised and lateral aortorrhaphy performed, is described. The patient withstood total occlusion of the aorta at the level of the ninth thoracic vertebra for 41 minutes without ill effect. This attests to the adequacy of the collateral circulation for the maintenance of the liver and the other viscera for this period of time. The results obtained establish surgical excision as feasible and practical in the extirpation of this otherwise fatal lesion. The author feels that if any attempt had been made to free-up and clamp the neck of the aneurysm in order to avoid cross clamping the aorta, the aneurysm would have been torn, resulting in massive hemorrhage. The evidence for this statement was amply demonstrated as the aneurysmal sac was being detached from the parietes after repair of the aorta had been successfully concluded. Whereas the anterior wall appeared substantial, the posterior wall of the neck and sac was tissue-paper thin and was very adherent to the posterior chest wall. This is explained by the fact that aneurysms in this area are "blowouts" with walls composed primarily of adventitia that readily gives way laterally beneath the parietal pleura. The parietes, because of this intimate relationship, become a part of the aneurysm's posterior wall. In contradistinction, aneurysms of the ascending aorta and aortic arch area do not have this relationship and are amenable to clamping at their necks.

Bilateral Adrenalectomy and Oophorectomy in the Treatment of Recurrent Carcinoma of the Breast. J. P. Eddy. Rhode Island M. J. 38:207-209 (April) 1955 [Providence, R. I.].

Total adrenalectomy, with or without concomitant oophorectomy was performed by Eddy on eight patients with advanced breast cancer. Seven were operated upon prior to January, 1954, and have a sufficiently long follow-up to make the analysis significant. All of these patients were selected for treatment on the basis of widespread metastatic disease, some had previously undergone x-ray therapy and hormonal therapy, or both. The operation required about two hours. The adrenals were removed with the patient in the posterolateral position, after resection of the 12th rib. The ovaries were removed by turning the patient from one side to the other when necessary. The severely ill patients withstand the procedure remarkably well. There was no operative death. Two of the seven patients are now dead and showed no significant response to the treatment. Four have improved markedly and are leading essentially normal lives. One has improved moderately, leading a somewhat restricted but still painless existence. The average patient who can withstand a major surgical procedure can also withstand bilateral oophorectomy and adrenalectomy. In addition to the usual preoperative preparation for major surgery, such a patient is given 50 mg. of cortisone intramuscularly every six hours, the day before operation, including 5 mg. of desoxycorticosterone acetate intramuscularly, and 5 gm. of salt is added to the diet. The morning of the operation another 50 mg. of cortisone and 5 mg. of desoxycorticosterone acetate are administered. During the operative procedure 1,000 cc. of blood is given, and if necessary, the blood pressure is supported by injection of norepinephrine. The first 24 hours postoperatively the patient receives 50 mg. of cortisone intramuscularly every six hours, and one injection of 5 mg. of desoxycorticosterone acetate. During the second 24 hours after operation 50 mg. of cortisone is given intramuscularly every 8 hours with 5 mg. of desoxycorticosterone acetate. On the third postoperative day 50 mg. of cortisone is given every 12 hours with 3 mg. of desoxycorticosterone. On the fourth day cortisone may be given by mouth, 25 mg. every six hours, and thereafter 3 mg. of desoxycorticosterone acetate every other day. Cortisone therapy is reduced to a basal dose of 25 mg. twice a day. Salt is added to the diet (approximately 3 gm. daily). These patients are instructed to consult a physician in case of any sudden unexpected stress that may change their metabolic requirements. Malaise, weakness, orthostatic hypotension, sweating, and tachycardia may all suggest impending adrenal crisis and should be promptly recognized and treated.

Plasma Cell Mastitis: A Review and Report of a Case. B. E. Ferrara. Am. Surgeon **21**:376-384 (April) 1955 [Atlanta, Ga.].

Plasma cell mastitis is a rare condition of the female breast which simulates mammary cancer. Ferrara reports a case of a woman, aged 27, who complained of a swollen right breast. She had been delivered of a normal child three weeks before. She did not nurse the baby. Several days following the birth of her child, soreness and redness of the skin of the breast was noted. She was seen by another physician who treated her with local applications and daily penicillin injections for several days. The inflammation partially subsided, but there remained a firm movable mass, 3.5 cm. in diameter, in the lower medial quadrant of the right breast, with minimal local heat and redness of the overlying skin. The mass was not painful, but seemed to be adherent to the chest wall. No axillary nor supraclavicular nodes were palpable. The mass was excised. The diagnosis of plasma cell mastitis was made after study of the specimen. Adair called attention to this condition with his publication of 10 cases in 1933. A total of 76 reported cases are tabulated. Two phases of the disease have been described by Adair. 1. The acute phase is characterized by signs of inflammation in the breast that subsides after several weeks to a month. The symptoms may vary in intensity; inflammation may be so mild as to be forgotten by the patient. There may be chills and fever. The breast may be tender, swollen, and reddened. A creamy nipple discharge is frequent. Usually more than one quadrant of the breast is involved. The axillary nodes are usually enlarged. As the inflammatory reaction subsides, the breast becomes less red in color, less swollen, somewhat nodular, and with better localization of the process. This latter occurrence has been referred to as the subacute phase. 2. In the residual phase all signs of inflammation have subsided. A discrete, firm, well-defined, deep-seated mass is present in the breast. Skin fixation may be present, and fixation to the chest wall may occur. The mass may be painful. Nipple discharge, which usually is creamy and thick (and may be bloody), is common. Nipple retraction is frequent. The axillary nodes frequently are palpable. The clinical picture is that of carcinoma. The residual mass may be present for several years before excision, or it may completely disappear without treatment. It is a disease of parous nonlactating women. There is general argeement that the lesion is inflammatory. Most observers believe that the cause is chemical rather than bacterial. Adair described the pathological characteristics: (1) the presence of plasma cells in the breast occurring in broad sheets and infiltrating ducts, duct walls, and interstitial tissues; (2) the proliferation of duct epithelium piling up 6 to 10 rows deep; and (3) the formation of giant cells by the heaped-up lining cells. The histological appearance may resemble comedocarcinoma due to the proliferation of duct epithelium. It also resembles tuberculosis, but there is no caseation.

Bronchial Carcinoma: Survey of 317 Patients. J. R. Bignall. Lancet **1**:786-789 (April 16) 1955 [London, England].

One of the two hospitals in which these studies were made specializes in diseases of the chest and the other in cancer. Many patients are first seen elsewhere and are sent to these hospitals for bronchoscopy, surgical treatment, radiotherapy, or a second opinion. During 1951, 317 patients with bronchial carcinoma attended the hospitals. The diagnosis was based on histological evidence in 199 (62%) patients. One-fifth of the patients had had symptoms or signs for less than two months, but half had had them for more than four months, and a tenth for more than a year. Almost a third had clinical or radiographic evidence of metastases when first examined. Even when symptoms had been present for less than a month, 1 in 20 had metastases; and the proportion rose to a half in those with symptoms of five months' duration. Thoracotomy was precluded in 40% because of intrathoracic or extrathoracic spread; and in a third because of the position of the growth, deficient respiratory function, gross wasting, refusal to be investigated, or incorrect diagnosis. The chest was explored in a quarter, but in about a third of these the tumor could not be removed. Resection was possible in only 18% of the 317 patients. A little over a third received radiotherapy. A third survived a year from the first attendance and a sixth two years. A quarter were alive two years after the start of their illness; 31 of these 77 patients had had the tumor removed. The manner of dying was recorded in 128 patients. Of 25 who died after resection, 10 had clinically manifest cerebral metastases, compared with 16 of 103 who had not had the tumor removed. Bignall believes that the course of the disease in these selected patients, unfavorable as it is, is better in some respects than that of patients with lung cancers generally. Many old people may never reach chest clinics or special hospitals; and some die with metastases in the brain or elsewhere before the existence of the primary tumor is known. In 18% of the present group it was possible to remove the cancer. If the tumor is not removed few patients live longer than two years from the first manifestation of the disease. By the time a bronchial carcinoma causes symptoms obtrusive enough for the patient to seek advice the tumor has often spread beyond the lung. Even with the most efficient medical service and a population conditioned by propaganda to a delicate balance between hypochondriasis and ignorance, it seems unlikely that the proportion of those with eradicable tumors could be greatly increased. Even detection by mass radiography is unlikely to increase it dramatically.

Kartagener's Syndrome: Surgical Treatment: Lobectomy and Segmentectomy. J. A. Taiana, A. J. Villegas and E. Schieppati. Rev. Asoc. méd. argent. 48:565-568 (Dec. 15-30) 1954 (In Spanish) [Buenos Aires, Argentina].

Kartagener's triad of congenital malformations of all the viscera and the structures of the respiratory tract is rare. It consists of situs inversus totalis, bronchiectasis, and rhinopharyngosinusopathy. The case reported by the authors is the ninth in the Argentinean literature. The patient had had poor general health, chronic bronchorrhea, and other respiratory symptoms since birth. At the age of 21, the predominant symptoms were fatigability and acute mucopurulent bronchorrhea with a daily sputum volume of 200 cc. Clinical, electrocardiographic and roentgenographic examinations, and bronchoscopy showed situs inversus totalis and large cylindrical and saccular bronchiectasis in the lower lobe of the left lung, which was located in the right hemithorax, and in the lingula pulmonis and the anterior segment of the upper lobe of the same lung. An operation was planned. Preoperative treatment, consisting of a hygienic diet, antibiotics, aerosols, vitamins, liver and iron therapy, postural and gymnastic exercises, and treatment of the rhinopharyngeal disease by a specialist was given for seven months, at the end of which time the patient's general health was greatly improved, and he had gained 17 kg. (37.5 lb.). In this period his sputum volume dropped to 50 cc. a day. A right thoracotomy, removal of the lower lobe of the left lung, lingulectomy, and removal of the anterior segment of the upper lobe of the left lung were performed. The postoperative course was uneventful. The patient continued to gain weight, his general health improved, and the bronchorrhea was almost completely controlled. An excellent readjustment of the thorax with complete pulmonary reexpansion was observed in the roentgenograms.

NEUROLOGY & PSYCHIATRY

After-Examination Following Poliomyelitis Epidemic in Buskerud in 1951. L. Stang. Tidsskr. norske lægefor. 75:265-267 (April 15) 1955 (In Norwegian) [Oslo, Norway].

On follow-up examination of 224 patients treated during the 1951 poliomyelitis epidemic 116, or 51.8%, were able to work. If patients able to do light work are included, the figure is 162, or 72.3%. Thirty-eight patients, or 17%, were found to be severely disabled, and 24, or 10.7%, were dead. Forty-five, or about 28%, of the paralyzed group were still under treatment. It was concluded that those with the bulbar and encephalitic types have a relatively good prognosis if they can be brought through the acute phase of the disease. Here active therapy with early tracheotomy and oxygen has its greatest value. Of the 12 patients in this group, seven escaped noteworthy disability and 5 died. Paralyses occurred in 72.3% of the patients, spinal paralysis dominating. Twenty orthopedic operations were performed on 17 patients.

Course of Myasthenia After Denervation of the Carotid Sinus. H. G. Mertens. Nervenarzt 26:150-154 (April 20) 1955 (In German) [Berlin, Germany].

The first of the four patients with myasthenia presented by Mertens was a 46-year-old woman, in whom muscular weakness had been increasing gradually for 16 years, so that she had ptosis, could walk only a few steps, and could not dress herself. Bilateral exclusion of the glomus caroticus was carried out by infiltration with procaine hydrochloride. A noticeable increase in muscular power resulted, which persisted for several hours. After several repetitions of this test, surgical denervation of carotid sinus was performed on one side. This was followed by marked improvement, which lasted for only about eight days, except for improvement in chewing, which persisted longer. Three weeks after the first operation denervation of the carotid sinus was performed on the other side. This again was followed by great improvement in muscular power, which persisted for only 8 to 14 days. At the end of eight weeks the condition was worse than before the operation and the patient was practically helpless, even if she took 10 tablets of prostigmine. After that there was gradual improvement, over a period of about six months, so that the patient was again able to do her housework and even dance. This improvement had persisted for one year when the patient was last seen. Similarly favorable results were obtained in a 47-year-old man, in whom signs of myasthenia had been present for 10 years, and who recently had become bed-fast. Definite improvement was evident after the first and second operation, and this improvement gradually progressed over a period of six months, the patient being able to take long walks and requiring only one to three tablets daily. Nine months after the operation progressive exacerbation set in again, so that the patient's condition was hardly any better than before the operation. Denervation of the carotid sinus was performed also in two young women, in whom signs of myasthenia had been present for only one and three years, respectively, but improvement lasted only a few days. The author was unable to obtain results as favorable as those of other investigators, who resorted to this method on the basis of animal experiments.

Treatment of Temporal-Lobe Epilepsy by Temporal Lobectomy: A Survey of Findings and Results. M. A. Falconer, D. Hill, A. Meyer and others. Lancet 1:827-835 (April 23) 1955 [London, England].

Epilepsy of temporal lobe origin may not be controlled by anticonvulsant drugs. Sometimes it is caused by a tumor, angioma, or cyst, and it may cease when this is excised. More often, however, the underlying lesion is microscopic in size and hard to detect. The clinical pattern of the seizures and their association with epileptic electroencephalographic discharges in one or both temporal lobes may be the only guides. In the three years preceding March, 1954, the authors treated 31 patients, with intractable epilepsy of this type, by resection of the responsible temporal lobe. Since one of the 31 patients died shortly after the operation, 30 cases are reviewed. Twenty-three came from the epileptic practice of a psychiatric hospital and the remainder from a general hospital. Hence it is not surprising that all but one of them also had a definite personality disorder. The sexes were equally represented. The ages, at the time of operation, varied from 2½ to 56 years. Each patient exhibited a variety of attacks. Amnesic seizures without a major convulsion but associated with auras of an epigastric, olfactory, gustatory, cephalic, or psychical character (psychomotor attacks) occurred in all. Many patients had also noticed that these auras sometimes appeared without any dazedness or amnesia. Grand mal seizures had occurred in 12 patients several times, in 9 they could be excluded, and in the remaining 9 they had either been very occasional or else the history was not sufficiently comprehensive to exclude them. The associated personality disturbances varied greatly. A characteristic feature was a history of emotional disorder and of poor adaptation to social demands, work, and sexual life of long duration. Most patients had been under medical supervision for many years, and their attacks had continued in spite of long and adequate trials of various anticonvulsants. Before operation, all patients, besides having a comprehensive psychiatric assessment, were subjected to detailed neurological, electroencephalographic, and neuroradiological examinations. Twelve of the 30 patients were freed from their epileptic attacks, and in 14 others the epilepsy was greatly improved. Twenty were benefited as regards their personality changes. The authors believe that the high frequency with which pathological changes have been found in the resected temporal lobes and the high rate with which relief or improvement has followed operation suggest that the lesions observed and the symptoms relieved were related.

Histamine Therapy for Schizophrenia: A Follow-Up Study. A. Hoffer and S. Parsons. Canad. M. A. J. 72:352-355 (March 1) 1955 [Toronto, Canada].

Histamine therapy, in the form recommended by Sackler and others, was used in 12 schizophrenic patients in a psychiatric ward of the Regina, Sask., General Hospital. Nine of the 12 patients were improved on discharge, but although only 4 retained their improvement at follow-up, all 12 were living in the community, and if the only criteria of improvement were discharge from hospital, a perfect treatment response might be claimed. Four patients attained a satisfactory adjustment in interpersonal relationships, social activities, and vocation, and they are better than they were before their illness. These four were less than 25 years old, but of the eight who did not improve only two were under age 25.

GYNECOLOGY & OBSTETRICS

Treatment of 850 Cases of Simple Uterine Hemorrhage by Intra-Uterine Application of Radium. W. Barr and A. A. Charteris. J. Obst. & Gynaec. Brit. Emp. *62:187-194 (April)* 1955 [London, England].

Excessive functional uterine bleeding, especially when it occurs about the time of the menopause, was formerly often treated by inducing an artificial menopause with the aid of radium. The results obtained were satisfactory as regards control of the hemorrhage, but some criticized the method on the grounds that it produces unusually severe menopausal symptoms, local tissue necrosis, and even an abnormal incidence of uterine neoplasms. The results obtained at the Western Infirmary of Glasgow during the years 1926 to 1949, when 850 patients were treated by intrauterine application of radium, were analyzed. The primary treatment produced satisfactory results in 774 patients, while 56 required further treatment. Menstruation was reestablished in 10 women, each of whom belonged to a younger age group than would now be treated, and 22 patients were lost from the follow-up. There were no deaths and few postoperative complications. There was no evidence that the menopausal symptoms were unusually severe or greatly different from what might be expected in the natural menopause. The age of the patient seems to play a part, in that a higher incidence of severe symptoms occurred in patients under 42 years of age. This suggested that 42 is the lowest age at which the artificial menopause should be induced. Four patients developed some form of neoplasm at a later date, but only two involved the uterus; one was a cervical carcinoma, which the authors do not regard as a sequel of the radium treatment. This leaves only one patient in the series who had adenocarcinoma of body of uterus and this seems a very low incidence in 850 cases. Lately a second patient was found in whom carcinoma of the body of the uterus developed. The authors do not regard this alleged hazard as a contraindication to radium treatment.

The Natural History of Pelvic Tuberculosis. T. Barns. J. Obst. & Gynaec. Brit. Emp. *62:162-175 (April) 1955* [London, England].

To ascertain the mode of invasion of the genital tract, studies were made on 107 women with genital tuberculosis attending the gynecologic department at the Newcastle General Hospital in the past 11 years. Laparotomy had been performed in 55 in this department, providing an opportunity to obtain information concerning the presence of abdominal tuberculosis. In a further 25 patients a laparotomy had been performed before coming under observation. Curettage was performed in 83 patients. Histological examination, biological examination, and direct culture were carried out in all cases, and a culture was also obtained from the spleen of the inoculated guinea pig in 27 cases. Eighty-seven patients were radiologically examined; in many of the patients former chest films were obtained from other hospitals. The most significant information, however, was obtained through a careful history. Seventy-three per cent of the patients had evidence of other forms of tuberculosis; pleural effusion and tuberculous peritonitis each occurring in about 33% of the patients. In only eight patients were these coexisting lesions still in an active state. The primary site of tuberculous infection was located in 57 patients; this was found to have been in the lung in 46; in the glands of the neck in 5; in the abdomen in 5; and on the skin in one. This suggests that invasion of the pelvis had taken place by the hematogenous route in at least 52 of these patients. Evidence of the site of the primary lesion was available in 20 patients who had had tuberculous peritonitis. In only one out of every four of these patients was this site within the abdomen. It would therefore appear probable that peritonitis had arisen in at least 75% of these patients as the result of spread of infected material from a preexisting tuberculous focus in the pelvis. The human strain of tubercle bacillus was found in all patients from whom a successful culture was obtained. The date of primary infection was identified in 37 patients. In some, invasion of the pelvis occurred within a few months after the primary infection, and in more than half of the patients there was evidence that pelvic infection had taken place within three years of the primary infection. Dissemination to the pelvis probably occurs in the period of activity of primar tuberculous lesions. Genital tuberculosis was shown to be particular risk accompanying primary tuberculosis during ado lescence. This provides additional grounds for urging that girl be rendered tuberculin positive by BCG inoculation befor reaching this age.

A Study of the Effects of Dihydroergotamine on the Inta Human Uterus: Part I—"Sympatholytic" Properties. W. Garrett. J. Obst. & Gynaec. Brit. Emp. 62:145-149 (Apr 1955; **Part II—"Oxytocic" Properties.** M. P. Embrey and W. Garrett. ibid. 62:150-154 (April) 1955. [London, England].

Excess endogenous epinephrine and over-action of the uteri sympathetic nerves have been regarded as causal factors incoordinate uterine action, and so dihydroergotamine has he favor with some workers, as it is said to possess powerf epinephrine-blocking properties yet to be devoid of the oxyto activity characteristic of the ergot series as a whole—an activi that is potentially dangerous in labor because of the unpredi able spasm that it may produce. A study of the history of hydroergotamine shows that at its introduction to clinical pra tice it was hailed as a boon in the treatment of uterine inert Later, with further experience, a note of caution was sound Of the two reports presented here, that by Garrett is concern with its "sympatholytic" properties. He demonstrates that in t maximal dosage permissible in the human subject, dihyd ergotamine fails to impede the normal response of the body the uterus to the adrenal medullary hormones. After int muscular injection of 0.25 mg. of dihydroergotamine both e nephrine and norepinephrine still have their characteristic effe on the uterus in late pregnancy and labor; in the presence 0.1 mg. of dihydroergotamine per half hour by slow intraven infusion uterine contractions are still inhibited by epinephri From the human subject in late pregnancy and labor, dir tocographic evidence has been produced showing that dihyd ergotamine fails to block the actions both of epinephrine a norepinephrine in the doses recommended by its advocates. vestigating the "oxytocic" properties of dihydroergotami Embrey and Garrett present tocographic evidence from healthy puerperal patients that dihydroergotamine is a pow ful, though somewhat unreliable, oxytocic agent. The dose dihydroergotamine, if used as an oxytocic in the third stage labor, would be 0.75 to 1 mg. by intravenous injection, and least twice as much by intramuscular injection; but for this it does not appear to have any advantage over the bett established alkaloids. The strong oxytocic properties of dihyd ergotamine make it a potentially dangerous drug for the tre ment of incoordinate uterine action in labor.

Question of Interruption of Pregnancy in Retinopathia Gra darum. A. Heydenreich. Zentralbl. Gynäk. 77:1-14 (No. 1955 (In German) [Leipzig, Germany].

Many investigators regard the retinopathy of pregnancy as indication for therapeutic abortion, the only problem to be cided being when it should be performed. Whereas some vocate immediate interruption of pregnancy, others advise th therapy of the underlying nephropathy or preeclampsia shou be tried first. Heydenreich believes that repeated follow- examinations, if possible for several years after the retinopath should supply the answer to this problem. At his clinic a typic albuminuric retinopathy of pregnancy with papillary edem hemorrhages, foci of exudates, and vascular changes was d tected in 17 of 129 women with toxicosis of pregnancy (13% Three of these patients had eclampsia and 14 had preeclamps In contradistinction to these organic vascular and retin changes, functional changes, in the form of spastic irregulariti of the caliber of the retinal vessels and mild papillary edem were observed in 35% of the women with pregnancy toxicos Two factors are of decisive importance for the development eyeground changes in toxicoses of pregnancy: the height of th blood pressure and the duration of the toxicosis. The author wa able to make follow-up examinations one to six years after de livery in 15 of the 17 women with retinopathy. He found tha the widely accepted opinion that retinopathy of pregnancy i no threat to the life of the woman is erroneous. On the basis o eyeground changes, blood pressure, and functional tests of the kidney, 60% of the women showed signs of a malignant nephrosclerosis. Interruption of pregnancy or induction of labor is indicated in women with retinopathy for the following reasons. 1. The prospects of restoration to normal decrease as the eyeground changes increase. 2. The various therapeutic measures instituted, even when the woman is hospitalized for several weeks, never improved the preeclampsia or renal changes. On the contrary, the pregnant organism often resorted to self-defense, in that premature birth resulted spontaneously. 3. A viable infant is more often attained by prompt interruption of pregnancy than by prolonged waiting. Sterilization is not necessary, since even rather old primiparas with a severe retinopathy pass through a second pregnancy without any signs of toxicosis or retinopathy. In those women in whom eclampsia or preeclampsia was not complicated by eyeground changes, or who showed only functional changes in the retinal vessels, follow-up examinations several years later revealed complete recovery, that is, the prognosis was favorable in these patients.

Physical and Psychic Preparation of Women for Childbirth. F. Lepage and G. Langevin-Droguet. Presse méd. 63:549-551 (April 16) 1955 (In French) [Paris, France].

The authors' results with 40 women prepared for childbirth in weekly classes during pregnancy compare favorably with those obtained in 40 unprepared women, with regard to time of expulsion of the fetus, flexibility of the perineum, use of forceps, and perineal injury. The method consists of muscular and breathing exercises, massaging to instill relaxation, instruction regarding the process of childbirth, and discussion of psychic problems. This procedure should never be termed "childbirth without pain." Painful contractions are normal and unavoidable in labor, but their effect can be lessened by proper preparation of the parturient. Fear can be eliminated or minimized, and maximal cooperation can be secured. Better results are obtained as treatment is started earlier. To safeguard the reputation of the method, it should not be tried in unselected patients. Tuberculosis, heart disease, hypertension, albuminuria, diabetes, toxic goiter, adnexitis, fibroma, and habitual abortion are contraindications.

PEDIATRICS

Therapeutic Misuse of Salicylate Compounds with Resulting Intoxication: A Report of Two Cases in Infancy. J. F. Keith Jr. North Carolina M. J. 16:141-144 (April) 1955 [Winston-Salem, N. C.].

The first of the two children was a 5-month-old girl, who was referred to the hospital by her physician because of abnormal respirations and cyanosis. Three weeks prior to admission the infant had had acute coryza. At that time she was treated, without the advice of a physician, with aspirin, Castoria, and "fever and cold medicine" obtained at a local drug store. The child improved temporarily, but five days later the symptoms recurred. The "fever and cold medicine" was continued. Five days prior to admission the baby began to "feel hot," became irritable, and ate poorly. Three days before admission diarrhea developed, and was treated with penicillin. She was given 80 mg. aspirin and tablets for the fever, and the mother continued to give the "fever and cold medicine." On the day of admission the infant had periods of collapse alternating with periods of extreme irritability. She received 10 or more of the aspirin tablets in the 24 hours preceding admission, in addition to the "fever and cold medicine." She was seen by the family physician four hours prior to her hospitalization. At that time she was comatose, exhibited marked hyperpnea, and was cyanotic. A tentative diagnosis of salicylate intoxication was made, before laboratory data were obtained, and treatment with oxygen and parenterally administered fluid was started. Twelve hours after admission the infant suddenly had a generalized clonic convulsion and became extremely cyanotic. She was treated with sodium phenobarbital and calcium gluconate. Within five minutes the convulsion was relieved and the color improved. Because of continued diarrhea, 350 cc. of Ringer's solution and 350 cc. of 5% dextrose in water were given intravenously. Clear fluids, offered frequently and in small amounts by mouth, were taken eagerly. In 72 hours the diarrhea abated, there was a marked decrease in the hyperpnea, and the urine was negative for acetone. At the time of discharge, on the sixth hospital day, physical examination was within normal limits. During the five days prior to admission the infant had received 75 mg. per pound per day of aspirin, in addition to what had been given over the preceeding three weeks. The second patient was a girl, aged 23 months, whose mother had been giving her one or two aspirin tablets daily since early infancy, "because they seemed to make her quieter." Nothing was known of the amount given in the days immediately prior to the admission, but a fairly large amount was given because of the child's irritability, in the misconception that aspirin has a sedative effect. Keith believes that while idiosyncrasies to salicylate do occur, the type of salicylism most frequently seen in children is a true intoxication. These cases usually represent the injudicious use of aspirin therapeutically in infants and toddlers. Occasionally, intoxication occurs in the toddler group as a result of the accidental ingestion of oil of wintergreen, which has a methyl salicylate concentration of 98%, 1 cc. of this being equivalent to 0.5 gm. of aspirin.

Decompression Treatment of Whooping-Cough: A Clinical Survey of 903 Cases. H. S. Banks. Brit. M. J. 1:1052-1055 (April 30) 1955 [London, England].

During the last five and a half years, 903 patients with whooping cough were treated by low air pressures in a decompression chamber at the Park Hospital in London, England. The selected patients, up to six or eight at a time, went into the chamber accompanied by a nurse, ward orderly, or the parent in the case of some infants or a young frightened child. A telephone connected the occupants of the chamber with the porter-operator, who watched them through a porthole window during the whole course of the treatment. The pressure of air in the chamber was reduced progressively for about 20 minutes until the equivalent of an altitude of 12,000 ft. (3,660 meters) was reached. This low pressure was maintained for 45 minutes and then gradually increased during the 20 to 25 minutes "descent." The treatment thus lasted about 90 minutes. Some pain in the ears and deafness were commonly experienced during the "descent" and for a short time thereafter. Of the 903 patients, the results could be assessed in only 782, 63 of whom were less than one year of age, 454 were between the ages of 1 and 4, 244 between the ages of 5 and 9, 7 between the ages of 10 and 15, and 14 were aged 15 or over. Pronounced and rapid improvement in four to seven days with virtual cessation of the paroxysmal cough occurred in 205 patients (28.2%), and slower but probably significant improvement in 7 to 10 days occurred in 248 patients (34.1%), while 274 patients (37.7%) were therapeutic failures. A particularly valuable sequel to the treatment in many patients was the relief of vomiting; among the 427 children who were vomiting food more than once daily just before treatment, the vomiting stopped fairly abruptly in 246 (57.7%), was reduced in an additional 86 (20%), and was unrelieved in 95 (22.3%). Results in relation to the age of the patients suggested that children in the age group between 5 and 9 years may be benefited most by the decompression treatment, while results in infants and adults may not be quite so good as in children between the ages of 1 and 9 years. Twenty-four patients received a second decompression treatment, and although the figures are small they suggest that a second treatment did not often yield good results when the first treatment failed, except, perhaps, when the first treatment was given too early, i. e., before two and a half weeks of the disease. Decompression treatment is harmful to the acutely ill patients with pyrexia, cyanosis, or appreciable atelectasis. The results reported are based on careful selection of cases and combined assessment by parents and physicians. An adequately controlled experiment has not yet been done but should be attempted when opportunity offers. The mechanism of the action of decompression in whooping cough has not been elucidated. Further trials should preferably include biochemical studies.

New Therapy of Scoliotic Postures in Children. J.-B. Baron, A. Cabau and N. Cabau. Presse méd. 63:574 (April 20) 1955 (In French) [Paris, France].

Scoliosis in nine girls was corrected or improved by the wearing of prismatic lenses to correct heterophoria. Each patient had scoliotic posture, exophoria, lateral inclination of the head, and a lateral deviation on walking. The correction of the ocular disturbance by means of prismatic lenses immediately caused replacement of the sagittal axis perpendicular to the horizontal. This was accompanied by replacement of the sagittal axis of the head in relation to the vertical, raising of the dropped shoulder, and equalization of the brachiocephalic triangles. This phenomenon demonstrates the existence of synergy between the oculomotor muscles and the paravertebral muscles. It also offers a simple method for the correction of scoliosis, which can be prolonged indefinitely.

Effect of Administration of Gluten, Starch, and Fat on Children with Celiac Disease: Clinical and Experimental Investigations: Preliminary Report. C. Hansted. Ugesk. læger 117:481-493 (April 21) 1955 (In Danish) [Copenhagen, Denmark].

The author confirmed the observation that gluten from wheat, rye, and oats is harmful for children with celiac disease, while wheat starch, corn meal, rice flour, buckwheat, peas, beans, potatoes, various vegetables, meat, and fish are well borne. The patient's sensitivity to gluten depends on the kind and amount of fat in the diet. The sensitivity is greatest with a high fat content and greater with milk fat than with olive oil, which consists mainly of triglycerides with unsaturated fatty acids. The clinical symptoms on a gluten-free but high fat diet suggest that fat alone may to some degree unfavorably affect children with celiac disease. The gluten sensitivity is the same in a diet free from starch as in a diet rich in starch.

OPHTHALMOLOGY

Intravenous Treatment of Optic Neuritis: Comparison of Corticotropin and Typhoid Bacilli. P. Kazdan and R. J. Kennedy. A. M. A. Arch. Ophth. 53:700-701 (May) 1955 [Chicago].

Two groups of patients with optic neuritis who, at the time of treatment, were not thought to have a demyelinating disease were treated. One group of 11 patients was treated with intravenous injections of killed typhoid bacilli and the other group of 11 patients with intravenously administered corticotropin. There was no case of bilateral optic neuritis in the group treated with corticotropin; however, there were two such cases in the group treated with intravenous typhoid bacilli. One patient treated with corticotropin had a relapse five weeks after the last treatment. He was given a second course of 10 daily doses of intravenously injected corticotropin, followed by a tapering off with 25 mg. of oral cortisone four times a day for two weeks. A 13-month follow-up after the second course of treatment revealed no recurrence. Comparison of the results obtained from these two methods of treatment showed no superiority of one method over the other, especially as regards visual acuity.

New Theories of Vascular Disease, with Special Reference to the Syndrome of Polycythemia in Ocular Pathology. H. L. Birge. Am. J. Ophth. 39:362-369 (March) 1955 [Chicago].

The syndrome of polycythemia, including not only the rare polycythemia vera but also the common secondary types, has yet to be placed in its proper position as a cause of many vascular problems. Many ocular hemorrhages can be avoided by normalizing blood volume, and many vascular accidents can be prevented by learning to recognize the syndrome of polycythemia. If it is not recognized before ocular surgery, hemorrhage, hyphema, thrombosis, or anesthetic difficulties are likely to ensue. Polycythemia occurs more often in private than in clinic practice. It is most frequent in men between 50 and 60 years of age. Birge illustrates the importance of blood volume studies for ophthalmologic surgery on the basis of case histories. Blood-volume estimation should be routine in all cases in which the hematocrit report shows any abnormality whatsoever. Thrombosis is so common in patients with polycythemia that, when the ophthalmologist sees engorged, cyanotic retinal veins, he is justified in obtaining a hematocrit and, if the values are above 44 in females or 47 in males, he should order a blood volume determination. This practice will prevent many vascula accidents. When middle-aged persons have polycythemia due t dietary excesses, the simplest form of treatment is the prop diet. When treatment for the polycythemia syndrome must b administered quickly, phlebotomy is the method of choice. Thi procedure may be used for long-term treatment if it is repeate at the required intervals. Radioactive phosphorus (P^{32}) is pr ferred by hematologists in cases of polycythemia vera. The u of anticoagulants involves many problems, such as the expensiv ness of heparin, or frequent prothrombin time tests, if oth anticoagulants are used. Birge therefore does not favor an coagulant therapy but suggests more frequent study of t blood volume, with changes in the blood elements as indicate This therapy seems to give better results with less danger a at less expense than anticoagulant therapy. By reducing t excessive blood volume, the problem can be handled simply the office, and proper attention can be given to such seconda factors as hypertension, diabetes, or cardiac failure.

Vogt-Koyanagi Syndrome Precipitated by Lens Extracti Report of a Case. E. A. Swartz. Am. J. Ophth. 39:488-4 (April) 1955 [Chicago].

Swartz presents the history of a man, aged 55, in whom extracapsular lens extraction was done for a hypermat cataract, with accidental rupture of the capsule. Subseque bilateral uveitis, alopecia, poliosis, vitiligo, and dysacousia veloped. While this combination of symptoms has long b known as the Vogt-Koyanagi syndrome, it has never been ported in its entirety as the result of intraocular surgery. positive pigment test, along with the bilateral uveitis follow surgery, is consistent with the diagnosis of sympathetic ophth mia. Swartz feels that sympathetic ophthalmia and the V Koyanagi syndrome (which he would call uveoencephalitis agreement with Cowper) are basically the same entity and the same etiology, although the etiological factor need not the same agent in all instances. He gained the impression t the two conditions are related like mirror images, in that in so-called Vogt-Koyanagi syndrome the etiological agent ga entrance to the cranial contents and progresses thence to the whereas, in the sympathetic ophthalmia form, the etiolog agent gains entrance to the eye and progresses from there the cranial contents. Penicillin, aureomycin, and terramy were not beneficial in the treatment of this case. Cort applied topically and subconjunctivally was of slight benefit long as it was used but did not bring about complete quiesce of the disease process.

Experimental Approach to the Pathogenesis of Retrole Fibroplasia: II. The Influence of the Developmental Matu on Oxygen-Induced Changes in the Mouse Eye. L. J. Gyll sten and B. E. Hellstrom. Am. J. Ophth. 39:475-488 (Ap 1955 [Chicago].

Newborn mice and 5-day-old and 10-day-old mice w exposed to 98% or 100% oxygen for five days, after which t were rapidly transferred to normal air. They were killed fr 1 to 10 days later, and the eyes were subjected to microsco examination. All groups of mice showed hemorrhages in eyes, mostly in the nerve fiber layer and in the vitreous bo There were irregular proliferations of the nerve-fiber vess with capillary tufts budding into the vitreous body, and regularities of the retinal layers. In newborn mice the reti changes were mostly concentrated in the neighborhood of t optic disk; in older ones they reached more anterior parts the retina also. The ocular hemorrhages and the irregular vas proliferation were more conspicuous in mice exposed to co centrated oxygen at an earlier age than in those exposed oxygen at a later age. The older animals tended to show mo retinal irregularities and foldings than the younger ones, a an increasing frequency of a characteristic retinal atrophy the ganglionic layer, the inner nuclear layer, and the outer plex form layer was observed. These experiments seem to provi further evidence of the pathogenetic relation of the oxyge induced eye changes of mice and human retrolental fibroplasi

THERAPEUTICS

A Method for the Objective Evaluation of Bronchodilator Drugs: Effects of Dapanone, Isuprel, and Aminophylline in Patients with Bronchial Asthma. L. Cander and J. H. Comroe Jr. J. Allergy 26:210-218 (May) 1955 [St. Louis].

Seventeen asthmatic patients between the ages of 18 and 67 years were asked to inspire fully and then to expire as rapidly and forcefully as possible into a well-balanced spirometer writing with minimal friction on a rapidly moving kymograph. This procedure gives values for both vital capacity and maximal expiratory flow rates. The test measures objectively the degree of bronchial or bronchiolar obstruction. The technique is rapid and simple and requires a minimum of understanding and cooperation on the part of the patient. After several control tests, drugs were administered. On one day, isopropylarterenol (Isuprel) hydrochloride (1:200 aerosol) was administered first, followed 30 minutes later by 3,4-dihydroxyisopropylamine propiophenone (Dapanone) hydrobromide (2% or 5% aerosol); on another day, the order was reversed. The dose of the aerosol administered over a 10-minute period varied between 0.2 and 0.4 cc. Vital capacity and maximal expiratory flow rate were measured at 5-minute and 10-minute intervals during the next 30 minutes. In all cases, 0.5 gm. of aminophylline was given intravenously over a 10-minute period after the administration of the two other drugs. Results indicated that either 5% Dapanone or 0.5% Isuprel, given initially as aerosol, is an effective bronchodilator drug. Each drug produces a significant increase in maximal expiratory flow rate if administered after time has elapsed for maximal action of the other drug, administered first. The peak effect occurred in almost every patient within 30 minutes after the administration of these drugs. Maximal benefits, however, were obtained by the simultaneous use of these nebulized drugs and aminophylline, administered intravenously. Data obtained in the authors' study on the variability in vital capacity and maximal expiratory flow rate in asthmatic patients without therapy reemphasize the need for careful control studies in the evaluation of bronchodilator drugs.

Study of Framycetin Sulfate in Aerosol Therapy in 198 Cases of Bronchopneumopathy. A. Biron. Presse méd. 63:551 (April 16) 1955 (In French) [Paris, France].

The author administered framycetin sulfate in aerosol form to 198 patients with bronchial asthma, tuberculous asthma, lung abscess, suppurating bronchitis, acute bronchitis, or pulmonary congestion. Results were good in 172, fair in 21, and poor in 5 patients. There were no instances of drug intolerance in the usual dosage of 100 mg. a day nor in doses ranging from 300 to 600 mg. a day. The highest total dose given was 18 gm. in 30 sessions. Thus framycetin sulfate in aerosols seems to be an efficient, safe method of dealing with certain pathogenic agents not easily influenced by other forms of therapy, such as resistant micrococci, and proteus or pyocyanic organisms.

Long-Continued Anticoagulation Treatment with Phenindione. P. Jorde. Nord. med. 53:604-605 (April 14) 1955 (In Norwegian) [Stockholm, Sweden].

From October, 1941, to October, 1954, 30 patients were given long-continued anticoagulation treatment with phenindione on an ambulant basis. In 12 cases the diagnosis was cardiac infarct, in 11, angina pectoris, and in 7, thrombosis or embolism. Phenindione lends itself well to long-term anticoagulation treatment under ambulant control. The dosage for ambulant patients is higher than for hospitalized patients. The effect is fairly stable and an even prothrombin-proconvertin level seems to be more easily maintained with a constant dose of phenindione than with dicumarol. The duration of treatment averaged 339 days. In most patients the prothrombin-proconvertin level fluctuated between 10 and 30%. In some there were peaks beyond the 30% limit, as a rule because of need for increased phenindione dosage. Complications occurred in two patients; melena in one and hematoma in a whitlow in the other. The patients are warned that they must not undergo an operation without control of the prothrombin-proconvertin level.

Anticoagulants of Dicumarol Type: Clinical Experiments with Different Preparations. E. Lund, T. Geill, E. Søndergaard, and H. Dam. Nord. med. 53:602:604 (April 14) 1955 (In Norwegian) [Stockholm, Sweden].

Marcoumar, dicumarol, and the Geigy preparations—tromexan, coumachlor, G. 25766, and G. 23350—were tested with respect to their efficacy in the treatment of thromboembolic diseases. The anticoagulant effect was determined according to Aas's modification of the Owren and Aas prothrombin-proconvertin method. Dicumarol was found to have the well-known effect described in the literature. The dosage of tromexan was difficult to regulate because of the great variations in the prothrombin-proconvertin values. Coumachlor has a powerful protracted effect; the dosage was difficult to regulate because of strong individual differences in tolerance. The effect of G. 25766 was also prolonged; the dosage was easy to regulate, and it is regarded as well adapted for clinical use. The action of G. 23350 is like that of dicumarol. Marcoumar exerts a prolonged effect, readily allows the prothrombin-proconvertin values to be kept within the therapeutic range for a longer time with constant dosage, and is well suited for clinical use. Intravenous administration of moderate amounts of vitamin K_1 in aqueous colloidal solution produces a sure and rapid effect on prothrombin-proconvertin activity, which is reduced as the result of treatment with dicumarol and like preparations. If grave bleeding has set in, 10 to 20 mg. of vitamin K_1 should be given intravenously as an antidote. The therapeutic effect is attained in the course of two hours. If vitamin K_1 is given orally, the effect appears after five or six hours. If the anticoagulation treatment resulted in prothrombin-proconvertin values lower than 10% and thus caused a latent risk of hemorrhage, the prothrombin-proconvertin activity can readily be brought into the therapeutic range by small daily oral doses (1 to 2.5 mg.) of colloidal vitamin K_1.

Intermittent Isoniazid Treatment. I. Seri, E. Fehérvári and I. Szabó. Beitr. Klin. Tuberk. 113:234-240 (No. 3) 1955 (In German) [Berlin, Germany].

Intermittent treatment with isoniazid given on three consecutive days followed by a four day drug-free interval was given a trial in mice and men. Intermittent treatment of the animals was started with a daily dose of 15 mg. of isoniazid per kilogram of body weight on the first day after they had been inoculated with tubercle bacilli strain H 37 Rv. The intermittent treatment protected the animals against the development of tuberculosis in the same degree as the daily treatment with isoniazid did. Sixty patients with pulmonary fibrocavernous tuberculosis were given intermittent treatment with isoniazid at the State Tuberculosis Hospital in Budapest, Hungary. On three successive days the patients received a daily dose of 10 mg. of isoniazid per kilogram of body weight and in addition 10 to 16 gm. of *p*-aminosalicylic acid. In the next four days the patients did not receive any of the two drugs. This course of treatment was continued for 18 weeks. The results of the intermittent treatment in these patients were compared with those of the daily treatment of 50 patients with pulmonary tuberculosis with 5 mg. of isoniazid per kilogram of body weight and 4 to 12 gm. of *p*-aminosalicylic acid for 16 weeks. Results obtained with the intermittent treatment were superior to those with daily treatment since there was more pronounced roentgenologic improvement in general and concerning the cavities, the sputums of a larger number of patients became negative, and the improvement in the sedimentation rate was more pronounced. Development of resistance to the drug was slower, and the patients were able to tolerate larger doses of *p*-aminosalicylic acid. In the presence of moderate resistance, when small doses were no longer effective, improvement was still obtained with intermittent administration of the drugs. The incidence of undesirable side-effects was not higher with intermittent than with daily treatment. Consequently, this method of treatment is recommended for patients who are in the subacute stage of the disease and who require prolonged treatment.

BOOK REVIEWS

Advanced Surgery of Cataract. By Daniel B. Kirby, M.D., F.A.C.S., Surgeon, Department of Ophthalmology, University Hospital, New York. Cloth. $27. Pp. 271, with 234 illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 2083 Guy St., Montreal, Canada; distributed by Pitman Medical Publishing Company, Ltd., 39 Parker St., Kingsway, London, W.C.2, England, 1955.

In this book Dr. Kirby focuses attention on some of his newer approaches, advanced ideas, theories, and techniques, beginning with the complete preparation of the cataract patient by individual appraisal. He emphasizes the importance of sedation, anesthesiology (local or curare), and attention to the operating room equipment, medications, and sterility. His comments on the attitude and psychological approach of the ophthalmologist and operating room personnel illuminate a phase in cataract surgery often overlooked. He stresses the elevation of the corneal flap for clear, direct visualization of iris details, the cataract, the zonular attachment, and their attachments to the preequatorial area of the capsule. He considers the indications and reasons for the round pupil intracapsular lens delivery with the forceps at the 12 o'clock position in the preequatorial region. His chapter on the normal and pathological vitreous and its physico-chemical state is revealing and informative. He discusses the postoperative degeneration of the vitreous due to trauma to the vitreous and adjacent structures. He strongly advises against the use of undue and excessive pressure to separate the zonule and deliver the lens. He has developed a new and original explanation of the mechanics of the pressure maneuvers based on fundamental research and has redefined the variations of traction, force, the effects of the direct pull, elevation, tension, and sliding rotation. The surrations seen near the equator of the lens when traction is made on the lens capsule are also described. These serve as a guide against undue traction. One of the highlights of the book is the description of the procedures in the direct separation of the zonule above with a minimal amount of trauma and with a vitreous loss of slightly over 1%. The author reports having removed 97% of the lenses in capsule. Only by reading this abundantly illustrated and crystal clear description of the many newer concepts and techniques of cataract surgery can the ophthalmologist be made aware of the detailed and intimate interpretation of the phenomena occurring during cataract operations.

Doctors in the Sky: The Story of the Aero Medical Association. By Robert J. Benford, M.D., Colonel, Medical Corps, United States Air Force. Cloth. $8.75. Pp. 326, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1955.

This is the story of the first 25 years of the Aero Medical Association and its growth from a group of 35 men in 1929 to the prominent organization it is today. The book pays tribute to Dr. Louis A. Bauer, founder and first president of the association, a one time military flight surgeon who organized the first school of aviation medicine and wrote the first book on this subject. There are chapters on aviation medical journalism, medicine and air commerce, flight surgeons for airlines, and the recognition of aero medicine as a specialty. Interwoven into these chapters are biographical sketches of all the past-presidents of the association and a description of its annual meetings. Appendixes list the meetings, presidents, fellows, honorary members, certified specialists in aviation medicine, and others who in one way or another have achieved special prominence. The constitution and bylaws of the association are reprinted, and a selected bookshelf of aviation medicine is given. The illustrations are well selected but of uneven quality. The index consists chiefly of the names of military and civilian flight surgeons. The book will probably be of limited interest to those who are not closely associated with aviation medicine.

Handbook of Parliamentary Procedure. By Henry A. Davidson, Parliamentarian, American Psychiatric Association, Cedar Grove, N. J. Cloth. $3.75. Pp. 292. Ronald Press Co., 15 E. 26th St., New York 1, 1955.

The author shows evidence of his medical training in that he not only names the "diseases" and tells the basic characteristics of each "disease" but also recites possible complications and tells how each one may arise and how it should be treated should it arise. This book is more of a reference book or textbook than a handbook. Examples of the use of rules and a discussion of the reason for and method of their use is a feature. The glossary with the definition of each technical term is invaluable. Although exact details in answering hypothetical questions with a discussion of other possible opinions is of great value to the beginner, the expert will also gain much in reading this book. It gives sense and understanding to "Roberts Rules of Order" and other standard works that are commonly misinterpreted. The discussion of the difficult problem of substitute motions, often encountered in dealing with the so-called minority reports of committees is especially interesting. The lucid and logical explanation of many of the most troublesome rules will tend to increase the efficiency of every chairman who reads the book. This book not only instructs the chairman but also tells the members of an assembly how to accomplish their purposes and how to protect their rights. In fact, after reading this book a "sea lawyer" will know more than many able chairmen.

Bickham-Callander Surgery of the Alimentary Tract. Volumes I, II, and III. By Richard T. Shackleford, M.D., Assistant Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore. Assisted by Hammond J. Dugan, M.D., Assistant in Surgery, Johns Hopkins University School of Medicine. [Second edition.] Cloth. $60. Pp. 862; 863-1633; 1635-2575; lxxxix, with 1705 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, England, 1955.

In the foreword, the author, who was once associated with the late Dean Lewis, states that he accepted revision of Bickham's Operative Surgery with "a considerable amount of trepidation." After passing the second chapter, one can state that his uncertainties were not well founded. He shows fearless, positive, and thorough knowledge of all segments of surgery. He supports his point of view with a well-chosen, authoritative, and current bibliography, at the end of each chapter. The results of surgical procedures are stated. A succinct comment follows each description. The illustrations are well executed, properly placed, and have excellent legends. This type of book finds its greatest need in outlying communities, far removed from our teaching centers. Volume 1 deals with the esophagus, stomach, duodenum, liver, gallbladder, and extrahepatic bile ducts; volume 2 with the pancreas, spleen, small intestine, peritoneum, omentum, mesentery, and colon; and volume 3 with the anorectal tract, excision of the rectum, hernia of the gastrointestinal tract, and incisions. The author has handled a difficult assignment very well.

Heart Disease: Its Diagnosis and Treatment. By Emanuel Goldberger, M. D., F.A.C.P., Associate Attending Physician, Montefiore Hospital, New York. Second edition. Cloth. $12.50. Pp. 781, with 107 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1955.

In this edition Dr. Goldberger has retained the same general pattern as in the first edition, but with a number of changes and additions. Chapters that have been revised and expanded are those on heart failure, congenital heart disease, cardiac surgery, hypertension, and myocardial infarction. A new chapter on ballistocardiography has been added. Dr. Goldberger, who is probably best known for his work on unipolar electrocardiography, has resisted the temptation to overemphasize that phase of cardiology and has written a well-balanced, up-to-date, standard book on heart disease as a whole. It is well illustrated. At the end of each chapter there is a well-selected bibliography. This volume is recommended as a textbook for medical students and interns and as a reference book for the general practitioner.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

QUERIES AND MINOR NOTES

LL-OUT RADIATION

THE EDITOR:—*The Atomic Energy Commission stated recently that the amount of radiation due to fall-out was not greater than that affected by subjecting a person to a chest x-ray examination. Is not the distribution of the fall-out radiation at times irregular due to such factors as shifts of winds and precipitation so that even distant localities may get more radiation than those closer to the explosion? What about the amount that is added to the rest by the consumption of exposed water, crops, and livestock?* *M.D., New York.*

ANSWER.—With regard to the distribution of fall-out radi-on, there are marked variations due to winds, precipitation, d the like. The Atomic Energy Commission maintains a broad twork of measuring stations. Studies of water, crops, and live-ock have been and are being carried out very widely. As yet, off-site levels of radiation equal to those received during a est x-ray examination have been found nor is it likely that such ll be the case in light of the careful plans made by the Atomic ergy Commission and its scientists for the carrying out of tests.

UTPATIENT SHOCK TREATMENTS

THE EDITOR:—*A psychiatric patient has received shock treatments in a mental hospital with improvement, and it has been suggested that he receive the shock treatments on an outpatient department basis. Is shock therapy to be recommended on an outpatient department basis?*

Francis J. Petrone, M.D., Fall River, Mass.

ANSWER.—Some psychiatrists administer shock treatments to bulatory patients in outpatient offices and in private offices. nce the shock treatment is followed by a period of confusion, e patient must be accompanied by someone capable of waiting r his recovery from the postshock confusion and able to take e patient home. Many psychiatrists completely reject ambula-ry shock treatment, since the many possible complications and quelae of shock treatment are not under their observation or ntrol if the patient then goes home. There is a sharp division opinion about the matter, and this consultant would caution at anyone who does ambulatory shock treatment takes an necessarily dangerous responsibility for which there may be bilities for serious medical-legal prosecution.

UTURE MATERIAL FOR CORRECTION OF NGUINAL HERNIA

THE EDITOR:—*In the repair of an inguinal hernia, direct or indirect, some surgeons use stainless steel for sutures. What is the consensus on the use of steel sutures? Are they superior or inferior? Can their use be harmful from a long-range point of view?* *M.D., New York.*

ANSWER.—Although there is no complete consensus as to hat type of suture material should be used for correction of guinal hernia, it is the opinion of this consultant that the ajority of surgeons believe stainless steel sutures are of little enefit in the performance of a hernioplasty. There is a general onsensus, however, that nonabsorbable suture should be used, nd apparently there is about an equal division among those articularly interested in the subject about the advisability of e use of cotton or silk. It is generally agreed that absorbable atgut) sutures should not be used, because of the greatly in-eased reaction in any wound when absorbable sutures are used. Although stainless steel produces no reaction, it is probably undesirable for a radio-opaque material to be left within the abdominal wall. If the individual is thin, the sutures can frequently be felt, which is occasionally of psychic importance, and at times the sutures produce discomfort or real pain. Certainly, if reoperation becomes necessary, which is occasionally the case in spite of the type of suture material used, operation is much more difficult if stainless steel has been used at the previous procedure. This consultant is of the opinion that stainless steel has no advantage over the other nonabsorbable material, such as cotton or silk, and it has definite disadvantages in that it is more difficult to use and remains behind as a palpable and radio-opaque suture.

DIZZINESS IN SAILOR WHILE ON LAND

TO THE EDITOR:—*A 43-year-old white man complains of dizziness. He has resigned from the Merchant Marine after eight years' service. He states that while aboard ship at sea he was never bothered by dizziness; however, on going ashore he began to notice dizziness. Since he has been land based for eight months the dizziness has become progressively worse. There are no essential findings that could explain this. Blood pressure is 140/100 mm. Hg, the heart and lungs are normal, and the genitourinary, cardiorespiratory, and gastrointestinal systems are normal. He recently had an adenoidectomy and plastic surgery of the nose for nasal obstruction due to an old fracture. He had a chronic mild otitis media in the past, but it is not active now. Could this represent an imbalance of the vestibular system as a result of the constant rolling and pitching of a ship at sea? Treatment at present is dramamine, 50 mg. three times a day, and a low-salt diet.*

Jonathan P. Shermer, M.D., Fort Smith, Ark.

ANSWER.—Dizziness of peripheral vestibular origin may be the result of labyrinthine hydrops (Ménière's disease), labyrinthine injury by fracture or concussion, or interruption of the arterial blood supply to the labyrinth. In all of these conditions the vertigo is associated with nystagmus, nausea, vomiting, and ataxia, and in most of them there is also a perceptive hearing impairment. In labyrinthine hydrops the vertigo is characterized by recurring attacks with comparative freedom from dizziness between attacks. In the other conditions mentioned there is a single attack of vertigo lasting a few hours or days followed by gradual recovery. In the case described, where the dizziness is continuous, it is unlikely that it is due to peripheral labyrinthine disease. It is more likely due to a central disturbance such as multiple sclerosis or a psychogenic factor. It is not conceivable that dizziness lasting eight months could be the result of the motion of a ship at sea.

HEPARIN-LIPOTROPIC THERAPY

TO THE EDITOR:—*Please comment on heparin-lipotropic therapy as discussed by Read and Obetz in an article in the* Ohio State Medical Journal, *March, 1955.* *M.D., Wisconsin.*

ANSWER.—Therapy directed at a reduction of serum lipids, and particularly of the low density (beta) serum lipoproteins, is logical in view of present knowledge of the pathogenesis of atherosclerosis. Although other factors, such as blood pressure and local factors in the vascular wall are undoubtedly important, the evidence is fairly conclusive that the circulating lipoproteins are the source of the increased lipids found in atherosclerotic vascular walls. The physical state and particle size of the lipoproteins are important (in agreement with the older macromolecular theory of Hueper), probably due to the filtration properties of the vessel walls. The injection of heparin results in the formation of lipemia-clearing factor, or heparin-active factor, and a rapid decrease in the concentration of the larger low density (beta) lipoproteins. There is a reduction of the total

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The answers here published have been prepared by competent authori-es. They do not, however, represent the opinions of any medical or other rganization unless specifically so stated in the reply. Anonymous com-unications and queries on postal cards cannot be answered. Every letter ust contain the writer's name and address, but these will be omitted on quest.

amount of fat in the blood stream. Studies of most cell counts in animals and humans, and of circulating heparin levels, indicate that decreased heparin production in the body may be etiologically important in the accumulation of large amounts of circulating low density serum lipoproteins. Heparin retards the development of atherosclerosis in cholesterol-fat fed animals. However, reports of the effect of heparin therapy in angina have been contradictory. It must be remembered, however, that angina is a manifestation of preexisting disease. The product mentioned, Hepnine B, combines heparin, so-called lipotropes, and vitamin B factors. The preponderance of evidence negates any effect of added lipotropic substances on plasma lipids. The amount of heparin (25 mg.) in 1 cc. of the product is rather small, too little for marked or protracted anticoagulant or antilipemic effect. It is stated in the article quoted that choline negates the anticoagulant action of the heparin, but no data are given. The changes in the Sf 0-400 lipoproteins mentioned in three cases are unconvincing. In the first two cases—patients with diabetic gangrene and postacute myocardial infarction—the lipoproteins may have been reduced by active tissue necrosis and stress. The slight lipoprotein drop in the third case could easily be a spontaneous variation. Thus the beneficial effects noted were in angina, a most deceptive symptom. In view of the very small amounts of heparin given (25 mg. twice weekly) and in the light of present knowledge, it is hard to understand the mechanism responsible for the beneficial effects that were reported. Considerably larger amounts of heparin are required for prolonged marked reduction of plasma lipemia or lipoproteins.

WEIGHT REDUCTION

To the Editor:—*A man, 49 years of age, height 5 ft. 3 in., weighs 194 lb. He has taken off weight by a very hard diet; about 20 lb. His heart is normal, and the electrocardiograph does not show any pathological changes. His basal metabolic rate is plus 20. He lives on a diet of about 1,000 calories daily, but the weight does not go down further. What would you recommend in this case?* *Nathan Roos, M.D., New York.*

Answer.—A man who is 5 ft. 3 in. and weighs 194 lb. would have a basal metabolic caloric need of 1,600 to 1,900 calories. Nothing has been said of this patient's activity. It seems highly improbable that this patient is maintaining a constant diet of 1,000 calories and cannot lose weight. If it is at all possible, a week's hospitalization where the patient can be given a weighed 800 to 1,000 calorie diet and at the same time receive considerable dietary instruction and counseling might start the patient to lose weight again and thus encourage him. After discharge from the hospital it might be a good idea if he indulge in some light exercise regularly in addition to his dieting and, as an adjunct to his regular visits to his physician, to make regular bimonthly visits to a nutritionist who will spend time discussing his diet difficulties and give him understanding and encouragement. The motivation to lose weight must be there before anyone can continue on any restricted diet. This motivation must be kept alive, and the physician and nutritionist will have to help do this. Diet lists alone are not enough.

DIET AND PHYSICAL ENDURANCE

To the Editor:—*Can an alkaline diet hasten recovery from strenuous physical exertion? Can a preponderance of acid foods in the diet have an adverse effect on physical efficiency, endurance, or recovery from exertion?*

Nathaniel Sharp, M.D., Baltimore.

Answer.—As far as known there is no evidence that an "alkaline-ash" diet or "acid-ash" diet can affect efficiency and endurance. Diets are considered acid or alkaline by nature of the mineral residue they leave after combustion in the body. Meat, eggs, cereals, and cheese are the main acid-ash foods, while vegetables, most fruits, and milk are the main alkaline-ash foods. The body has an excellent buffer system, and the pH is very difficult to alter by dietary means. The pH of the urine can be acid, but this or the alkalinity of the diet has no known effect on physical endurance.

SCHOOL SHOWER FACILITIES

To the Editor:—*Are so-called gang or private shower facilities preferable for girl students in junior and senior high schools? Our high school has only two shower cubicles, and the rest of the shower facilities are without partitions. The school authorities have been advised that shower facilities without partitions are proper for girls of high school age, but some parents are not in favor of "gang" shower facilities.*

M.D., Connecticut.

Answer.—Whether "gang" showers or "stall" showers should be constructed in the shower facilities for girl pupils in junior and senior high schools depends on the self-consciousness and modesty of the pupils. Experience has shown that, in constructing a battery of showers, it is advisable to have the majority of them as "gang" showers, with one or two, or some other small proportion commensurate with the size of the school, in private shower stalls. Most pupils prefer "gang" showers. One will invariably find a few pupils, boys or girls, who by reason of early training and habit, insist on privacy in the nude. However, the appeal of the group soon leads them to prefer the "gang" showers. The reason for wanting to shower alone may be a habit of years, it may be based on immaturity of development or some physical disability that may cause comment, or it may be that the individual is not socially inclined. Whatever the cause, a few stall showers should be provided to permit these individuals to enjoy recreational activities without unnecessary embarrassment. The great majority however should be "gang" showers, which are more efficient. Since they are in the open with a minimum of wall area, they are much easier to keep clean and free from odors. Likewise, dressing in a shower stall limits the number of persons using the shower and therefore requires more showers and a larger portion of the building devoted to shower facilities.

LEUKOPLAKIA OF CERVIX

To the Editor:—*A patient has leukoplakia of the cervix, which covers quite an extensive area. What is the best way of treating it?*

Howard T. Morse, M.D., Takoma Park, Washington, D. C.

Answer.—Leukoplakia of the cervix is likely to change in character or disappear without treatment. It is usually induced by irritation and consists of a simple hyperkeratosis with a slight increase in the activity of the basal layer of cells. In spite of the fact that cancer of the cervix has occurred in conjunction with leukoplakia, there is no evidence that it is a precancerous lesion. The patient should be observed periodically, and, if there is any question as to the diagnosis, cytological smears and a liberal biopsy will help.

PARALYSIS OF DIAPHRAGM

To the Editor:—*A boy, aged 7 years, was found to have a paralysis of the right side of the diaphragm on a routine chest x-ray. The lungs were reported within normal limits. The condition is asymptomatic as far as the child, who appears normal, is concerned. Kindly send me the latest information on this condition. Is surgery indicated?*

Morton Marks, M.D., Milwaukee.

Answer.—Idiopathic paralysis of the diaphragm is not uncommon. It goes under the term of "eventration of the diaphragm." As the word "idiopathic" suggests, its cause is not known. Apart from its relatively slight effect on vital capacity, it is not clinically significant. Prior to 1936, induced permanent paralysis of the diaphragm by extraction of the phrenic nerve was common treatment in pulmonary tuberculosis. People who had this treatment have suffered no important ill-effects. In a child adjustment to the condition will probably be very satisfactory, and the condition will probably never become clinical. The only treatment is thoracotomy with plication of the diaphragm. This lowers it and permits greater expansion of the lung with a consequent increase in vital capacity. In a child operation should possibly be considered.

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THE PHYSICIAN AND WORLD MEDICINE

Harold S. Diehl, M.D., Minneapolis, Leonard W. Larson, M.D., Bismarck, N. D.
and
Franklin D. Murphy, M.D., Lawrence, Kan.

Health is a subject in which all people of the world, irrespective of color, race, and political philosophy, have a common interest. In fact, international cooperation in the field of health work may well prove to be a common ground for the development of understanding and cooperation that could extend to more difficult and controversial areas. This is a field in which the United States has the ability as well as a unique opportunity to assume world leadership. In the attainment of these objectives, physicians have very special opportunities and responsibilities. Fortunately, two organizations have been developed since World War II through which physicians may contribute to world health, world understanding, and world peace. These are the World Medical Association and the World Health Organization, organizations that constitute a team that is making one of the greatest contributions of our time to the improvement of mankind—a must for the prevention of the spread of communism. It is important that physicians understand the nature of each organization, its membership, its goals, and the individual physician's relationship to it.

THE WORLD MEDICAL ASSOCIATION

The World Medical Association is the world organization of physicians as a professional group. It is the equivalent on the world scene of the American Medical Association in the United States. It is composed of medical societies of the world, with the American Medical Association playing a leading role. In addition to association memberships, it allows for personal memberships on the part of physicians. The World Medical Association, which was founded after World War II at the initiative of leaders of the profession, particularly of the United States, Canada, England, and France, has grown in influence and importance as the voice of the physicians of the world. Annually, at its assemblies and at council meetings, it brings together leaders of organized medicine to consider the broad problems facing the physicians of the world. Among the contributions that the World Medical Association has made during its brief life are the development of the International Code of Medical Ethics, which is becoming increasingly well known as the modern Hippocratic Oath, and the sponsorship of the first World Congress on Medical Education, held in London in 1953, which has given stimulation and direction to the improvement of medical education throughout the free world. Currently it is undertaking leadership in the field of occupational health on a world-wide basis. Dr. Louis Bauer, past-president of the American Medical Association, is the executive secretary of the World Medical Association. Dr. Gunnar Gundersen and Dr. Edwin S. Hamilton, members of the Board of Trustees of the American Medical Association, are members of the council of the World Medical Association.

WORLD HEALTH ORGANIZATION

The World Health Organization is the governmental member of the world health team, analogous on the world level to the United States Public Health Service on the national level. It is a technical agency in the field of health, set up by the governments of the world within the general orbit of the United Nations, yet it is administratively independent of the United Nations. It has a membership of 84 nations. WHO is concerned with the improvement of public health and the development of sound and effective public health services in the nations of the world. It has established international services of great value, such as the compilation and dissemination of information concerning the prevalence of epidemic diseases and the development of international standards of biological preparations, services that can be provided only by an intergovernmental health agency. The policy-forming body of the World Health Organization is the World Health Assembly, which meets annually and is composed of delegations from the member governments. These delegations are always headed by physicians and, in the case of the United States, always include a representative of the American Medical Association.

Among the important accomplishments of the World Health Organization have been the exercise of leadership in the world-wide control of malaria, a disease that has long been of first importance in many countries of the world but that is now rapidly disappearing from the globe; leadership and direction in the mass control of yaws in the Carribean area and in Southeast Asia; the issuance of definitive technical reports of committees of international experts on a wide range of subjects, such as mental health, nursing, environmental sanitation, influenza, and plague; and the training through fellowship grants of some 2,000 professional persons in the field of health from countries that do not have facilities for needed training. The present director-general of the World Health Organization was elected by the World Health Assembly in 1953. He is Dr. Marcolino Candau of Brazil, who received much of his professional training in the United States and his public health experience with the Rockefeller Foundation and Institute of Inter-American Affairs Missions in Brazil. The chairman of the executive board of WHO is an American physician, Dr. H. van Zile Hyde, a Public Health Service officer who formerly practiced internal medicine in Syracuse, N. Y.

THE WORLD HEALTH TEAM

The World Medical Association and the World Health Organization work closely together, collaborate in various projects, and exchange representation at meetings of their various policy-forming bodies. The World Medical Association has been recognized formally by the World Health Organization as a spokesman for organized medicine in the world and is among the nongovernmental agencies given a formal status of relationship with the World Health Organization. It is essential that these organizations continue to cooperate in order to assure the greatest possible competence in areas such as the listing of drugs for which international standards are needed, the determination of dosages to be included in pharmacopeias, and the development of international practices affecting physicians.

At the national level in the United States, there is close association among those directly concerned with United States participation in each organization. As pointed out, the United States delegation to the World Health Assembly includes a representative from the American Medical Association. In addition to the three of us, such representation has included Dr. James E. Paullin and Dr. George Lull, members of the delegation that established the World Health Organization in 1946; Dr. James Miller, formerly a member of the Board of Trustees; Dr. E. J. McCormick, past-president of the A. M. A.; and Dr. Harry Mulholland, who has served the A. M. A. in many capacities. The chief of the delegation has always been a physician, the most recent being Dr. Chester Keefer, professor of medicine of Boston University medical school and special assistant to the Secretary of the Department of Health, Education, and Welfare. In 1953, the Board of Trustees of the American Medical Association established an International Health Committee to serve in a liaison capacity with the United States Public Health Service on international matters. This Committee is composed of the officers of the Board of Trustees, the secretary-general of the World Medical Association, and the representative of the American Medical Association on the preceding delegation to the World Health Assembly. This Committee has met three times with the chief of the Division of International Health of the Public Health Service and other governmental officials concerned with international health to hear reports on World Health Organization activities and to review and discuss matters coming before the World Health Assembly. This Committee preserves intimate and friendly relationships between governmental and nongovernmental agencies interested in this field.

THE INDIVIDUAL PHYSICIAN'S OPPORTUNITIES

There are several very definite things that American physicians can do to forward the work of both the World Medical Association and the World Health Organization as teammates on the world scene. Every physician who is a member of the American Medical Association is entitled to individual membership in the World Medical Association. Support through such memberships enables the World Medical Association to carry on its important activities. With membership comes a subscription to the *World Journal of Medicine*, which gives a view of the world scene in medicine. In support of the World Health Organization, the physician should familiarize himself with its values to the United States both as an arm of the foreign policy of our government and as a contributor to our domestic health. He can assist in developing understanding within his own community concerning the importance of the development of public health services in underdeveloped areas of the world as a barrier to the spread of communism.

Each of these organizations and both of them together give the physician a chance to be active within his own community in the interest of better world health. There is no single field in which a more fundamental job can be done in the building of a sound basis for peace than the field of health and medicine through nongovernmental and governmental action. This basis, indeed, gives physicians a singular opportunity to contribute to the future of mankind, an opportunity probably greater than enjoyed by any other profession.

University of Minnesota Medical School (14) (Dr. Diehl).

Doctor and Workingman.—Social and political movements have grown up to protect and sustain the workingman. These movements are begun as humanitarian protest against exploitation of human resources and usually with finest motivation. . . . Have these movements gone too far and have they reached a point of destructive paternalism? . . . One of the rewards of the American free enterprise system for an ambitious . . . workingman has been ready advancement from employed to employer status. Achievement of self-support, self-confidence and assumption of individual leadership and responsibility produce emotional satisfaction and moral growth. Current weight of benefit payments, governmental reports and audits, fund segregations and contributions, and constant emphasis upon a secure position with union benefits, workmen's compensation, guaranteed vacations, full pay when not working, annual wage, old age assistance and social security now blocks the free movement of the individual into new ventures. In day-to-day practice one sees numerous instances of workman frustration and retreat growing out of excesses of our social benefit systems. It can hardly be considered a political or reactionary protest to point out the stultifying effects of our constant quest for security without risk. —F. E. Rieke, M.D., Doctor and Workingman, *Northwest Medicine*, April, 1955.

SODIUM RETENTION AND EDEMA FROM PERCUTANEOUS ABSORPTION OF FLUDROCORTISONE ACETATE

Thomas B. Fitzpatrick, M.D., Ph.D., Herbert C. Griswold, M.D.
and
John H. Hicks, M.D., Portland, Ore.

The occurrence of untoward physiological effects after systemic administration of cortisone and hydrocortisone provided a stimulus for investigators to develop hydrocortisone lotions and ointments for topical application. By applying hydrocortisone topically, the anti-inflammatory effects could be utilized without the risk of sodium and water retention, edema, and other undesirable physiological changes associated with systemic administration. In the three years since the introduction of hydrocortisone products for topical application, occurrence of systemic absorption after topical application has not been reported. During the past 15 months since we began evaluating the therapeutic effects of topically applied hydrocortisone in various concentrations and vehicles, we have become suspicious of possible systemic absorption of topically applied hydrocortisone. For example, in using the simultaneous paired comparison method, it was often noted that the area receiving the placebo lotion or ointment appeared to respond almost equally to the area receiving hydrocortisone. Also, it was observed in a large series of patients receiving 1% and 2.5% hydrocortisone acetate lotion that improvement occurred in areas of dermatitis distant from the site of application.

To determine whether or not percutaneous absorption of 2.5% hydrocortisone acetate lotion occurs, two patients with generalized atopic dermatitis were hospitalized, and 100 ml. of lotion containing 2.5 gm. of hydrocortisone acetate was applied daily for seven days. Hydrocortisone compound F excretion was determined in three 24-hour urine specimens prior to application of the lotion and in daily 24-hour urine specimens during the seven day experimental period. There was no increase in the excretion of hydrocortisone during the period of application of 2.5% hydrocortisone acetate lotion in either of the patients. We therefore concluded that systemic absorption of detectable amounts of topically applied hydrocortisone acetate lotion did not occur. During the past year we have been evaluating lotions and ointments containing fludrocortisone acetate (9-*a*-fluorohydrocortisone acetate). The same curious phenomena were observed even more strikingly than with hydrocortisone; placebo treated areas and distant areas improved almost as rapidly and completely as the site of application of fludrocortisone acetate. Our earlier suspicions of systemic absorption of topically applied steroids were finally confirmed when, in October, 1954, generalized edema developed in a young woman with atopic dermatitis after topical application of 0.2% fludrocortisone acetate lotion.

The following five cases are presented as examples of increase in weight and edema following topical application of fludrocortisone acetate.

REPORT OF CASES

CASE 1.—A white female, aged 27, with chronic atopic dermatitis that had involved the arms and face was seen on this occasion because of pruritus and lichenification of the vulvar area. The patient was given 0.2% fludrocortisone acetate lotion to be applied three times daily. She started therapy on Saturday at noon and during the next 24 hours had used a total of 15 ml. in five applications. Monday morning the patient noted that her shoes pinched, her ankles had become swollen, and she also noted periorbital edema. The patient had, therefore, used 15 ml. of 0.2% fludrocortisone acetate lotion containing 30 mg. of fludrocortisone acetate during a 24 hour period. The edema disappeared within the next 48 hours following the interruption of therapy with fludrocortisone acetate lotion.

CASE 2.—A white female, aged 51, with subacute dermatitis involving only the left palm, was started on 0.2% fludrocortisone acetate lotion on Oct. 30, 1954, and was told to apply the lotion four times daily. After three days of application, the patient returned with ankle edema and noted a 4.5 lb. (2.03 kg.) gain in weight. She was unable to put on her shoes without discomfort. She was advised to continue the treatment and returned again on Nov. 16, 1954. At this time there had been a marked decrease in the ankle edema, the palmar surface had become dry, and the erythema had disappeared. She further continued the treatment, and the eruption cleared. Thus, the edema disappeared despite the continuation of the treatment. During the initial three day period the patient used 30 ml. of 0.2% fludrocortisone acetate lotion or 20 mg. of fludrocortisone acetate lotion daily.

CASE 3.—A white female, aged 33, with scattered patches of lichenified dermatitis on the sides of the neck, in the postauricular areas, and on the extensor aspects of the arms, applied daily approximately 5 ml. of 0.2% lotion (10 mg. of fludrocortisone acetate) to the areas of dermatitis on the right side and 5 mg. of 0.1% lotion (5 mg. of fludrocortisone acetate) to the areas of dermatitis on the left side. After three days of daily application of 15 mg. of fludrocortisone acetate lotion (a total of 45 mg.), the patient developed marked edema of the lower extremities, swelling of the face, and noted a weight gain of 12 lb. (5.4 kg.). The therapy was interrupted, and during the next 48 hours there was a rapid disappearance of the edema.

CASE 4.—A white female, aged 25, with generalized chronic atopic dermatitis, applied daily 5 ml. of 0.1% fludrocortisone acetate (5 mg.) to the upper half of the body and 5 ml. of 0.2% fludrocortisone acetate (10 mg.) to the left upper half of the body. The patient returned four days later after applying 15 mg. daily of fludrocortisone acetate and was found to have ankle edema, swelling of the face, and a 10 lb. (4.5 kg.) weight gain. The skin showed marked improvement, and the patient was instructed to apply the lotions only once daily. The edema gradually subsided, and one week later there had been an 8 lb. (3.6 kg.) weight loss.

From the divisions of dermatology and cardiology, University of Oregon Medical School.

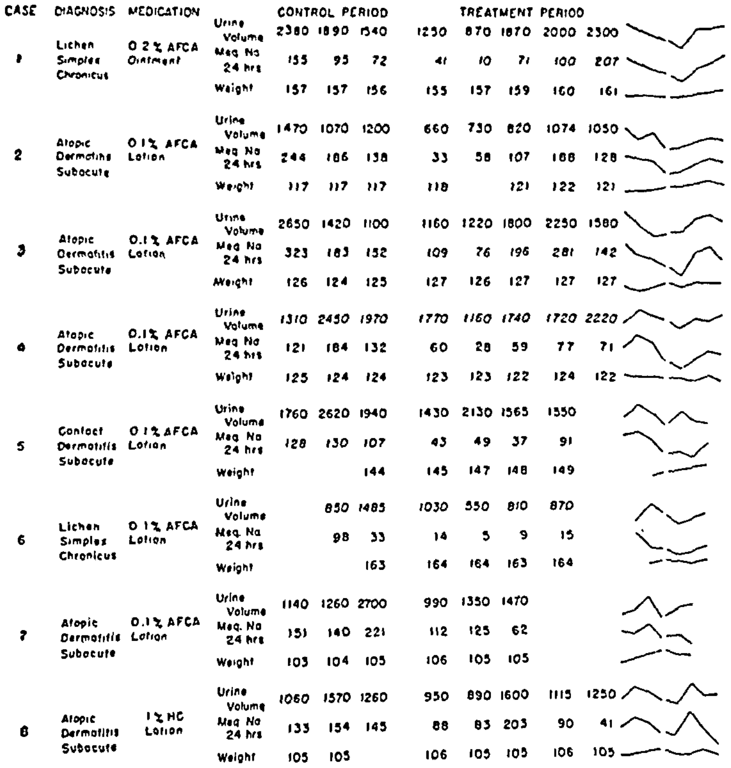
The hydrocortisone determinations were made by Dr. Peter H. Forsham, University of California Medical School, San Francisco.

The 0.1% and 0.2% fludrocortisone in absorbent ointment base (Plastibase) and 0.1% and 0.2% lotion used in this study were supplied by Dr. Harvey Blank of the Squibb Institute for Medical Research, New Brunswick, N. J. The 0.1% and 0.25% fludrocortisone lotions used in this study were supplied by Dr. Elmer Alpert of Merck and Company, Inc., Rahway, N. J.

This study was supported in part by the Squibb Institute for Medical Research, New Brunswick, N. J., the U. S. Public Health Service, and the Oregon Heart Association.

CASE 5.—A white female, aged 43, with acute contact dermatitis of the right axilla and the right lateral half of the chest and a chronic lichenified dermatitis of the dorsum of the hands, applied 7.5 ml. daily of 0.25% lotion (18.75 mg. of fludrocortisone acetate) to all areas for two days and during the next two days applied approximately 7 ml. daily of 0.1% lotion (7 mg. of fludrocortisone acetate). In four days, she had applied 51.5 mg. of fludrocortisone acetate. At the end of the treatment period (four days) she had noted a weight gain of 8 lb. (3.6 kg.). The patient was advised to apply the 0.1% fludrocortisone acetate lotion only once daily. She returned one week later, and at this time the edema had subsided but had not disappeared and she had noted a 3 lb. (1.3 kg.) weight loss.

In addition to the above patients, we have observed six patients with subacute and chronic dermatitis who have noted a weight gain of more than 5 lb. (2.3 kg.) in less than a week after starting therapy with fludrocortisone acetate lotion in 0.1%, 0.2%, and 0.25% concentrations. Furthermore, two patients with anogenital pruritus developed a weight gain of more than 5 lb. within a week, ankle edema, and puffiness of the face while using 0.2% fludrocortisone acetate in absorbent ointment base (Plastibase). All of the above patients had no evidence of cardiac disease and had not noted edema prior to therapy with fludrocortisone acetate.



CASE	DIAGNOSIS	MEDICATION		CONTROL PERIOD			TREATMENT PERIOD				
1	Lichen Simplex Chronicus	0 2% AFCA Ointment	Urine Volume	2380	1890	1540	1250	870	1870	2000	2300
			Meq Na 24 hrs	155	95	72	41	10	71	100	207
			Weight	157	157	156	155	157	159	160	161
2	Atopic Dermatitis Subacute	0 1% AFCA Lotion	Urine Volume	1470	1070	1200	660	730	820	1074	1050
			Meq Na 24 hrs	244	186	138	33	58	107	188	128
			Weight	117	117	117	118		121	122	121
3	Atopic Dermatitis Subacute	0.1% AFCA Lotion	Urine Volume	2650	1420	1100	1160	1220	1800	2250	1580
			Meq Na 24 hrs	323	183	152	109	76	196	281	142
			Weight	126	124	125	127	126	127	127	127
4	Atopic Dermatitis Subacute	0.1% AFCA Lotion	Urine Volume	1310	2450	1970	1770	1160	1740	1720	2220
			Meq Na 24 hrs	121	184	132	60	28	59	77	71
			Weight	125	124	124	123	123	122	124	122
5	Contact Dermatitis Subacute	0 1% AFCA Lotion	Urine Volume	1760	2620	1940	1430	2130	1565	1550	
			Meq Na 24 hrs	128	130	107	43	49	37	91	
			Weight			144	145	147	148	149	
6	Lichen Simplex Chronicus	0 1% AFCA Lotion	Urine Volume		850	1485	1030	550	810	870	
			Meq. Na 24 hrs		98	33	14	5	9	15	
			Weight			163	164	164	163	164	
7	Atopic Dermatitis Subacute	0.1% AFCA Lotion	Urine Volume	1140	1260	2700	990	1350	1470		
			Meq. Na 24 hrs	151	140	221	112	125	62		
			Weight	103	104	105	106	105	105		
8	Atopic Dermatitis Subacute	1% HC Lotion	Urine Volume	1060	1570	1260	950	890	1600	1115	1250
			Meq Na 24 hrs	133	154	145	88	83	203	90	41
			Weight	105	105		106	105	105	106	105

Serum sodium-potassium-chloride levels and total water space and weight of patients during control period and during administration of fludrocortisone acetate. AFCA = fludrocortisone acetate.

RESULTS

In order to prove that the weight gain and edema resulted from sodium and water retention, we followed the excretion of urinary sodium in seven patients. The fludrocortisone acetate lotion or ointment was applied three times daily during the experimental period in the patients summarized in the figure. In the three patients included in the table, 0.2% fludrocortisone acetate lotion was applied every hour from 8 a. m. to 8 p. m. during the experimental period.

The following method was used. Twenty-four hour urine samples were collected from 8 a. m. to 8 p. m. The volume was measured and aliquots were saved for determinations of sodium concentration. An internal standard flame photometer technique was used. The volume times the concentration was equivalent to the total milliequivalent of sodium excreted. All sodium concentrations were based upon a standard curve obtained each day. The daily weight of patients was determined before breakfast on the same scale for each patient. Blood for sodium-potassium-chloride determination was clotted in chemically clean tubes and immediately centrifuged. The serum was promptly removed. After proper dilution, the sodium-potassium levels were determined on the flame photometer with the internal standard technique. Blood chlorides were determined by a modified Sandroy technique. Total body water levels were determined by the falling drop technique.[1] Administration of the heavy water was by the oral route.

The figure lists the daily weight changes, the 24-hour urine volume, and the total excretion of sodium in eight patients during a control period and a treatment period. The patients were on a general hospital diet with a standard intake of sodium. Water was permitted as desired. It can be seen that, without exception, there is a reduction in the sodium excretion during the first two or three days of application of the fludrocortisone acetate. In three patients there was marked reduction in the urine output, and in three patients there was a weight gain of up to 5 lb. This data would indicate that the fludrocortisone acetate contained in the lotions and ointments was absorbed through the skin and promoted retention of sodium and water.

It is of interest to note that, after the initial period of sodium and water retention, there is an increase in sodium excretion and presumably less absorption of fludrocortisone acetate. This increase in sodium excretion was coincident with improvement of the dermatitis. Although there was a variable but definite decrease in urinary sodium excretion after topical application of 1.0% hydrocortisone acetate lotion, there was no change in body weight (figure, case 8). In a group of 105 patients with dermatitis who were treated with 2.5% and 1% hydrocortisone lotion during the past 15 months, we have never observed edema.

The table depicts the serum sodium-potassium-chloride levels and total body water space, as well as weight of these patients during a control period and during administration of the various lotions. The second group of data on these three patients lists the values obtained after application of 0.2% fludrocortisone acetate lotion for three days. In general, it can be stated that there is little change in the sodium-potassium-chloride serum concentration.

The increase in total body water of the first patient in the table is equivalent to the increase in weight gain over the three day period. The data would not suggest that there is necessarily any escape of sodium into the intracellular space. This further confirms the information derived from urinary sodium excretion determinations in the preceding group of patients; namely, that salt and water are retained with an increase in the various spaces.

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[1] Hurst, W. W.; Schemm, F. R., and Vogel, W. C.: Simultaneous Determination of Total Body Water by Antipyrine and Deuterium Oxide: Evaluation of the Methods on Edematous Subjects, J. Lab. & Clin. Med. 39:36 (Jan.) 1952.

COMMENT

The presence of the 9-α-fluorine atom markedly increases the capacity of hydrocortisone to retain sodium.[2] The sodium and water retaining effects have limited the oral or parenteral use of fludrocortisone acetate. In a recent investigation of the antirheumatic effects of orally administered fludrocortisone acetate in doses up to 4, 6, and 8 mg. daily for 12 to 28 days, Ward and associates [2] observed a lessening of rheumatic symptoms but noted a marked retention of sodium. In one of the patients in their study, a gain in weight was noted while the patient was receiving only 2 mg. of fludrocortisone acetate daily. It is not surprising, therefore, that sodium retention and edema have been shown to occur in patients with dermatitis who are applying to the skin surface as much as 75 mg. of fludrocortisone acetate (30 ml. of 0.25% fludrocortisone acetate lotion) during a 24 hour period.

At least seven factors must be considered in estimating the amount of percutaneous absorption of fludrocortisone acetate lotion and ointment: (1) concentration of fludrocortisone acetate, (2) site of application, (3) the stage of dermatitis (acute, subacute, or chronic), (4) method of applying the ointment or lotion, (5) extent of application, (6) frequency of application, and (7) effect of vehicle.

Metabolic Studies on Three Patients Applying One-Fifth Per Cent Fludrocortisone Acetate Lotion

	First Patient		Second Patient		Third Patient	
	Period of Control	Period of Administration	Period of Control	Period of Administration	Period of Control	Period of Administration
Venous hematocrit, %	32	29	38	39	47	39
Blood volume, cc./kg	65	68	..	..	..	..
Total body water, liter	38.8	42.5	..	..	..	..
Weight, kg	63.6	67.5	51.8	52.7	70.9	71.8
Serum chloride, mEq	107	111	106	113	107	108
Serum sodium, mEq	145	143	142	147	147	143
Serum potassium mEq	4.0	3.9	3.8	2.7	3.4	3.3

Concentration of the Drug.—The concentration of the agent may be the most important factor in the production of sodium retention following topical application. It is estimated that in three applications daily a patient applies approximately 0.5 ml. of lotion to each 1% of the skin surface. In a patient with 40% of the skin surface involved in a dermatitis, 20 ml. of the lotion would be used in a 24 hour period. With the 0.25% fludrocortisone acetate lotion this would amount to an application of the skin surface of 50 mg. of fludrocortisone acetate and 20 mg. of fludrocortisone acetate with the 0.1% lotion. Since clinical edema has resulted after the oral ingestion of as little as 2 mg. of fludrocortisone acetate,[2] if only 1% of the applied drug were absorbed percutaneously, sodium retention and clinical edema could result. In a skin surface involved in an acute or subacute dermatitis, it is likely that much more than 1% would be absorbed percutaneously.

Site of Application.—The skin of the vulva, scrotum, and perianal areas probably has a much greater ability to absorb topically applied ointments and lotions, because of the promotion of absorption by the constant moisture in these areas. As mentioned above, two patients developed clinical edema after daily application of 0.2% fludrocortisone acetate in absorbent ointment base to the perianal area for one week.

Stage of Dermatitis.—The subjects in this series included patients with acute, weeping dermatitis; subacute dermatitis; and chronic lichenified dermatitis. It was our impression that there was a greater incidence of sodium retention and edema following topical application of fludrocortisone acetate in patients with acute dermatitis. Studies of electrolyte changes in patients applying the drug to intact skin and a larger series of patients with varying stages of dermatitis would be required to establish this belief. Other hormones (estrogens, testosterone, and progesterone) penetrate the intact skin rapidly and to a very great degree.[3] In several of our patients (e. g., case 2) the edema disappeared while the application of the lotion was continued. As the dermatitis cleared, the degree of absorption of fludrocortisone acetate appeared to decrease. Therefore, the troublesome edema that may occur in patients applying fludrocortisone acetate lotions and ointments might be considered only a temporary problem that disappears as the potent anti-inflammatory effects of the drug arrest the dermatitis with consequent decreased percutaneous absorption.

Method of Application.—Massaging or rubbing the lotion or ointment into the areas of dermatitis may enhance percutaneous absorption of fludrocortisone acetate. We have obtained the best therapeutic results with both fludrocortisone acetate and hydrocortisone acetate lotions and ointments by instructing the patient to massage a small amount into an area of skin the size of the palm of the hand. This technique of application may account in part for the increased number of patients with edema that we have observed. Several dermatologists [4] who have been evaluating fludrocortisone acetate lotions and ointments have apparently not observed edema or weight gain. Livingood,[5] however, has recently seen several patients with edema following topical application of this lotion. It is suggested that patients using fludrocortisone acetate be instructed to apply the lotion and ointment sparingly and to spread it lightly over the affected areas.

Extent of Application.—An increase in weight and edema occurred, although fludrocortisone acetate lotion was applied to less than 3% of the total skin surface

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[2] Ward, L. E., and others: The Effects of Aldosterone (Electrocortin) and of 9-α-Fluorohydrocortisone Acetate on Rheumatoid Arthritis: Preliminary Report, Proc. Staff Meet., Mayo Clin. 29:649 (Dec. 22) 1954.

[3] Rothman, S.: Physiology and Biochemistry of the Skin, Chicago, University of Chicago Press, 1954.

[4] Blank, H.: Personal communication to the authors.

[5] Livingood, C. S.: Personal communication to the authors.

(cases 1 and 2). Fludrocortisone acetate is probably inactivated in the skin as well as the liver.[4] Thus, application of the drug to a relatively large skin surface area may actually minimize the degree of percutaneous absorption, because there is more skin surface to metabolize the steroid before absorption occurs.

Frequency of Application.—The number of applications in a 24 hour period may be a critical factor, since the rate of inactivation of the drug may be exceeded by frequent applications. The 0.2% and 0.25% lotion should not be used more than twice daily; however, application of either of these concentrations to a damaged skin or the anogenital area only once daily could result in significant absorption, if a large amount were used in one application. If 2 ml. of 0.25% lotion containing 5 mg. of fludrocortisone acetate were applied and 50% of the drug absorbed, sodium retention could result.

Effect of the Vehicle.—Our series comprises a disproportionate number of patients treated with fludrocortisone acetate lotion. The preference for the lotion vehicle is based on our repeated observation that both hydrocortisone acetate and fludrocortisone acetate in a lotion vehicle are more effective in the treatment of dermatitis. Although we have observed sodium retention and edema in two patients using 0.2% fludrocortisone acetate in absorbent ointment base, it is our impression that a greater degrees of percutaneous absorption of this drug occurs when the lotion vehicle is used. The relatively large number of patients developing sodium retention and edema that we have observed may also be related to our high index of suspicion. After we became aware of the possibility of edema from topical application of fludrocortisone acetate, all patients receiving lotion and ointment of this drug were advised to weigh themselves daily and to note signs of edema, such as pinching of the shoes, ankle swelling, puffiness of the face, and increase in waist measurement.

Finally, the potential hazard of sodium retention, hypervolemia, and edema after prolonged applications of fludrocortisone acetate in chronic recurrent dermatitis must be considered. The risk of sodium retention and a rapid increase in blood volume after topical application of this drug may be considerable in a dermatitis occurring in patients with incipient congestive heart failure, toxemia of pregnancy, nephritis, and essential hypertension. In the presence of diseases in which sodium retention may be hazardous, these lotions and ointments should be used only under careful medical supervision. Patients with a normal capacity to excrete sodium may only develop a transitory edema that disappears spontaneously as the dermatitis improves.

Decreased sodium excretion occurred after local application of 1% hydrocortisone acetate lotion, indicating a significant percutaneous absorption. As mentioned earlier, there was no increase in hydrocortisone excretion after daily application of 2.5 gm. of hydrocortisone acetate in a lotion vehicle. This may be explained by the fact that the absorbed hormone inhibits the output of corticotropin, resulting in suppression of the normal adrenal cortical secretion of hydrocortisone. Thus there is no net change in hydrocortisone excretion, despite a significant percutaneous absorption of hydrocortisone. Recent evidence of pituitary inhibition by percutaneousl absorbed hydrocortisone has been provided by Lerne and Takahashi.[6] Two patients with an abnormally hig urinary output of melanocyte-stimulating hormone applied 30 ml. of 2.5% hydrocortisone acetate lotion dail to the normal skin of the arms. After one week of th experimental period, the urinary melanocyte-stimulati hormone output decreased to a level within norm limits. After discontinuance of the local applications hydrocortisone lotion, the urinary melanocyte-stimula ing hormone output increased. Lerner and Takahas estimated that at least 3% of the applied hydrocortiso was absorbed through the normal skin. This estima was based on the amount of orally given hydrocortiso required to reduce the urinary melanocyte-stimulati hormone output to within normal limits in the same t patients. The problem of sodium retention and eder from percutaneously absorbed hydrocortisone is pro ably not important clinically, since, on a weight t weight basis, approximately 50 times more hydrocor sone than fludrocortisone must be absorbed to result the same degree of sodium retention.

SUMMARY

Evidence of sodium retention has been observed in patients after topical application of fludrocortisone a tate (9-α-fluorohydrocortisone acetate) in a lotion and ointment vehicle. Quantitative measurement of total u nary sodium excretion in seven patients with dermati who applied fludrocortisone acetate lotion and ointm revealed a decreased excretion of sodium (or a sodi retention). The principal factors that promote percuta ous absorption of fludrocortisone acetate are the conce tration of the drug, the stage of the dermatitis, and t frequency of application. In addition, percutaneous a sorption appears to occur more commonly after applic tion of fludrocortisone acetate in a lotion vehicle.

In the majority of the patients, absorption of the fludrocortisone acetate and sodium retention occurred in the early stages of treatment and decreased as the dermatitis improved even while topical applications of the drug were continued. Thus, the edema may be considered only a temporary problem that corrects itself as the dermatitis improves. However, in patients with incipient congestive heart failure, toxemia of pregnancy, essential hypertension, and nephritis the transitory sodium retention and hypervolemia may be hazardous.

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[6] Lerner, A. B., and Takahashi, Y.: Personal communication to the authors.

Cure for Cancer.—Facts regarding the morphology of cancer are discouraging to the hope of a universal cancer cure in the near future. Many oncologists have misgivings about the recurrent statements in the lay press that cancer will be "licked" within a predictable period of time. If all cancer cells were of similar structure, and greatly different morphologically from all normal cells, we could entertain such a hope. Perhaps the most important thing we have learned in 50 years of cancer research is the complexity of the problem. This means that efforts at control and cure must be increased. . . . It looks now as if each form of cancer, and perhaps each case of cancer, may require individual treatment. . . . The victory may be won not by a single decisive battle, but by a series of successful minor engagements.—T. B. Dunn, M.D., Morphology and a Cure for Cancer, *Journal of the American Medical Women's Association*, April, 1955.

SALMONELLOSIS DUE TO SALMONELLA TYPHIMURIUM WITH EASTER CHICKS AS LIKELY SOURCE

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Outbreaks of gastroenteritis in humans due to Salmo- :lla infections are common and are being increasingly entified and reported. At present there are approxi- ately 222 known Salmonella types, all of which are ithogenic to man, animals, or both. According to Feig,[1] 5% of Salmonella outbreaks reported to the U. S. Pub- : Health Service during the period 1945 to 1947 were ue to Salmonella typhimurium, which is the predominat- ig type of Salmonella. S. typhimurium is not an uncom- ion infection in chicks and other poultry.[2] It is believed iat the infection may be transmitted through the egg to ie chick and that man may become infected by eating ggs that are insufficiently heat-processed.

In Minnesota there has been an apparent increase in almonella infections recorded by the state board of ealth. Forty cases were reported in 1949, as compared) 188 cases reported in 1953. S. typhimurium was iden- fied as the etiological agent in 66 (35%) of the 188 re- orted cases. It should be pointed out that since gastro- nteritis and salmonellosis as such are poorly reported, iese cases represent, in most instances, the findings of ositive stool cultures in tests made by the division of iedical laboratories. It is therefore believed that the in- rease is more apparent than real, probably representing n increased awareness of physicians to the problem and, n part, at least, a better selection of specimens submitted o the laboratory.

It is the purpose of this report to call attention to an inusual outbreak of salmonellosis traceable to chicks hat were distributed at Easter time by food stores as a neans of publicity. Reports of similar outbreaks were ooked for in the literature, but none were found. In 953 in Hennepin County, where the outbreak under :onsideration occurred, 97 cases of salmonellosis, includ- ng 32 due to S. typhimurium, were reported by the state oard of health. From January to May, 1954, 44 cases f salmonellosis were identified in Hennepin County, 24 f which (54%) were due to S. typhimurium.

Early in May, 1954, one of us (A. S. A.) called at- ention to several cases of salmonellosis in children, with he possibility of chicks being the source of infection. The chicks under suspicion were distributed just before Easter (April 18) by two large supermarkets. With this information all cases of salmonellosis that came to the attention of the state board of health and that were sus- pected of being involved in the chick outbreak were checked through the family physician. Twelve bacterio- logically proved cases were found. In all these cases S. typhimurium was isolated from feces specimens, as indicated in table 1. The 12 patients were from 11 households; members of 10 of these households obtained chicks from one store, and a member of one household obtained them from another. Both of the stores had obtained the chicks from the same hatchery, and a total of about 1,500 chicks was distributed. The chicks had been hatched on April 15 and distributed two days later.

Investigation through cooperation of the Minnesota Live Stock Sanitary Board and the School of Veterinary Medicine revealed no trouble in the past with the hatchery. Serologic and bacteriological studies on 533 birds remaining at the hatchery, from which some of the chicks involved were hatched, showed no evidence of Salmonella infection. It is of interest to note that the chicks, while awaiting distribution at the stores, were crowded and were fed with cereal intended, but unfit, for human consumption, as the packages were broken. Specimens from the intestinal contents of five chicks from four households were examined in the medical laboratories of the Minnesota department of health; from four of these S. typhimurium was isolated and from one, S. montevideo. No attempt was made to query all persons who might have received chicks from the store or to establish the total number of persons involved; however, information obtained on the known cases revealed that 29 out of 52 persons exposed, as members of the households where illness was reported, had symptoms of gastroenteritis and probably had cases of salmonellosis. These 29 persons include the 12 who had proved cases.

CLINICAL MANIFESTATIONS

Salmonella infections are of two types, the gastrointestinal type and the septicemic type. The first type, which is quite common in pediatric practice, presents symptoms of intestinal infection. The second type is quite rare. The symptoms are those of a severe septicemia that has not localized in any one area. The complications are septic localizations of the infecting organisms. In either type of the disease the symptoms may vary from subclinical to most severe and serious. All the cases of this particular outbreak were of the gastrointestinal type and presented signs and symptoms similar to the textbook version of the disease. The case material referred to in this section will be limited to four infants and two children seen by one of us (A. S. A.). In five of the six cases the onset of the disease was from four to six days after the chicks were brought into the home, although the incubation period is usually given as a few hours to three days after ingestion of the bacteria. The symptoms came on suddenly. All the patients had fever (temperature 103 to 104 F), all had watery diarrhea, four had gross blood in the stools, and two had episodes of vomiting. Blood cell counts were done on five of the six patients;

From the St. Louis Park Medical Center (Dr. Anderson); Director, Division of Medical Laboratories (Dr. Bauer), and Chief, Section of Communicable Diseases (Dr. Nelson), Minnesota State Board of Health.

[1] Feig, M.: Diarrhea, Dysentery, Food Poisoning, and Gastroenteritis: A Study of 926 Outbreaks and 49,879 Cases Reported to the United States Public Health Service (1945-1947), Am. J. Pub. Health 40:1372-1394, 1950.

[2] Biester, H. E., and Schwarte, L. H.: Diseases of Poultry, ed. 3, Ames, Iowa, Iowa State College Press, 1952, pp. 268-273.

two had normal white blood cell counts and three had white blood cell counts between 15,000 and 20,000 per cubic millimeter, with a moderate increase in the polymorphonuclear cells. Except for marked toxic condition, tachycardia, and irregular respirations in one case, very little was revealed by physical examination. Duration of fever and severe diarrhea was from one to five days.

Since there are approximately 222 known types of Salmonella, exact diagnosis depends on the recovery of the organism from the patient. The organisms were recovered easily by stool culture during the acute phase, and this is generally true in most cases of Salmonella infection. Blood cultures were not taken. They are occasionally positive in severe cases of gastrointestinal type and almost invariably positive in the speticemic type. Determination of serum antibody titers was not done because detectable antibodies are generally not present in all cases of salmonellosis; furthermore, it would be impracticable to attempt antibody titer determinations for all possible types of Salmonella.

Only one of these six patients was hospitalized. Penicillin was given to two patients and one of the tetracyclines to three. Neither penicillin nor the tetracyclines seemed to affect the course of the disease. Chloramphenicol, 50 mg. per pound of body weight per day, in divided doses, dramatically stopped the progress of the disease in a 2½-year-old girl who became progressively more ill over a period of five days. Chloramphenicol is the antibiotic of choice and is indicated in severe cases; however, caution must be employed in using this drug because in rare instances it causes aplastic anemia. All six patients had severe diarrhea at the onset and were checked daily for dehydration and toxic condition. They were also treated by the usual dietary management and symptomatic administration of antidiarrheal drugs.

TABLE 1.—*Cases of Salmonellosis in Eleven Households* *

Case	Sex	Age	Onset	Stool Culture		No. Ill in Each House/ Total Members	Source of Chick	Laboratory Report
				Date	Result			
1	M	4 mo.	4/22/54	4/25/54	S. typhimurium	1/4	....	....
2	F	23 mo.	4/23/54	5/ 3/54 5/27/54 6/15/54	S. typhimurium S. typhimurium S. typhimurium	... 1/4 ...	Store 1	S. typhimurium from intesti contents of chick, 5/17/54
3	F	3 yr.	5/ 4/54	5/ 9/54	S. typhimurium	6/8	....	....
4	F	10 mo.	....	4/30/54 5/ 9/54	S. typhimurium Negative	... 2/4	Store 1	S. typhimurium from intesti contents of one chick, S. m tevideo from intestinal co tents of other, 5/7/54
5	M	6 mo.	4/23/54	4/25/54	S. typhimurium	3/4*	Store 1*	S. typhimurium from intesti contents of chick, 5/5/54*
6	M	4 yr.	4/23/54	5/ 6/54	S. typhimurium	...	....	....
7	F	2 yr.	5/ 4/54	5/14/54	S. typhimurium	3/4	Store 2	....
8	M	5 mo.	5/ 7/54	5/12/54	S. typhimurium	4/5	Store 1	Chick died shortly before on of symptoms in patient
9	M	10 yr.	4/23/54	4/23/54 5/28/54	S. typhimurium S. typhimurium	2/5 ...	Store 1	S. typhimurium from intesti contents of chick, 5/5/54
10	F	35 yr.	5/11/54	5/15/54	S. typhimurium	3/4	Store 1	....
11	M	4 mo.	4/21/54	4/23/54 5/ 6/54 5/19/54	S. typhimurium S. typhimurium Negative	... 3/4 ...	Store 1	....
12	M	4 mo.	4/30/54	5/ 2/54	S. typhimurium	1/6	Store 1 or 2	....
				Total		29/52		

* Cases 5 and 6 in same household.

Most patients have Salmonella in their stools for s eral weeks to several months after their initial ac attack. Holt and McIntosh[3] refer to Rubenstein and co-workers "who showed that 54 percent of the patie convalescent from Salmonella infections, excrete the ganisms in the fourth week and 10 percent as late as twelfth week while 7 percent are still carriers after year. Infants are more likely to remain carriers t older children." In the past two years, one of us (A. S. has observed several children who have remained car for several months after the acute illness, but in no stance has he seen a case of Salmonella infection could be traced to one of these carriers. It has been that the use of chloramphenicol is not indicated in dren who have been carriers for less than a year. I the cases of the 1954 Hennepin County epidemic t was complete recovery. Holt and McIntosh[3] c Siligman as reporting a case fatality rate of 2.5% fants under one year of age and a rate of 1% in children. It is to be expected that chloramphenicol v lower these rates.

Concurrent with the illness of 6 patients with ga enteritis due to S. typhimurium, there were 11 members of these patients' families who had presur the same disease but were not sick enough to see a tor. Table 2 shows the age distribution of the number of sufferers from the Salmonella infection the number of those who sought medical help in th families seen by one of us (A. S. A.). Table 2 der strates that gastroenteritis caused by S. typhimuriu

TABLE 2.—*Age Distribution of Those Affected by Salmonella Outbreak*

Age, Yr.	No. Affected	No. S
Under 1	4	4
1- 2	1	..
3- 5	4	1
6-10	1	..
11-15	1	1
Over 15	6	..

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3. Holt, L. E., Jr., and McIntosh, R.: Pediatrics, ed. 12, New York, Appleton-Century-Crofts, Inc., 1953, p. 1,286.

ually so severe in infants less than one year of age that edical help will be sought. On the other hand, this dis- se tends to be so mild in children over the age of 2 and adults that medical help is only occasionally required. How do infants, who live in scrupulously clean cribs d seldom have anything go into their mouths that is not erilized, ingest the droppings of chickens? The answer found in the behavior of the 2 to 5-year-old. He han- les, caresses, and torments his pets and frequently ex- lores with his fingers the oral orifice of his baby sibling. may be mere chance, but we suspect it is not, that every patient under one year of age who had S. typhimurium had a sibling between the ages of 2 and 5 living in the same household.

SUMMARY

In an outbreak of salmonellosis involving at least 29 persons, with 12 of the cases proved by stool culture, the probable source was Easter chicks. This calls attention to the potential hazard of distributing chicks, ducklings, and similar small poultry for household pets.

4959 Excelsior Blvd. (16) (Dr. Anderson).

FUTURE OF THE INTERNSHIP FROM THE STANDPOINT OF THE NONAFFILIATED HOSPITAL

Ford K. Hick, M.D., Chicago

This presentation is intended to reach into the future ather than to deal with the present years. All of us know e have to fight for house officers and find the going orse year by year. We find foreign-trained men only a artial solution. We find other ways of getting along ithout adequate house staff difficult to say the least. And o we are ourselves doing, increasingly, work formerly one by interns. To discuss these ideas I wish to state ertain premises and then to leap into the future. These remises are: 1. We do not know how to operate hospi- als without an adequate house staff. 2. The services ren- ered by interns and residents are of great value, and the timulation they supply the staff is also valuable. 3. We ust think of internships and residencies together, since nen in either status thoughtfully do day-to-day work in he care of patients.

And now to the future. As the teaching centers en- arge each one seeks a higher percentage of its own raduates as house officers. Inevitably the competition or house officers increases and the small private hospital s squeezed the hardest. Perhaps it does not matter that ne by one they give up the battle and cease to try to ualify for internship training. In the matter of pay for nterns small hospitals are criticized for trying to get in- erns by generous pay, as it is held to "imply lack of good ducation program." Are the teaching hospitals equally vorried? I believe so, and I further believe their efforts o build up strong house staffs are aimed in part at estab- ishing a future safeguard for themselves. In years gone by nany a private hospital had some advantage in supplying superior nursing service. Today, few can maintain a arge nursing staff made up of older nurses accustomed o spending much time with individual patients.

At present many a young physician wishes to have members of his own family transported even a long way to the hospital where he was trained or to a comparable one. It is implicit that a smaller hospital, or, to say it properly, one without a good house staff, cannot deliver the professional care he wishes his family to receive. A considerable number of nonmedical people do the same thing. This thinking sets the stage for an undesirable development in which the man in the street comes clearly to recognize two levels of hospital excellence. Such a development threatens to put more burdens on the "teaching hospitals" than they can bear without expansion. At the present time teaching hospitals are in the minority. They are the frosting on the cake. What will happen if everyone wishes to be cared for in them whenever illness strikes? As the teaching hospitals assume a progressively increasing importance they will be liable to lose a type of leadership they now enjoy. They will lose it because, as they supply more and more "service" to the community, they will be increasingly burdened by outside pressure. In other words, whenever the standards of the nonteaching hospitals decline so that the teaching hospitals assume the major burden of the care of the sick, then the teaching hospitals become service agencies and so must be responsive to the needs of society at large.

The teaching hospital needs to protect and to nurture its smaller neighbors for its own security. Frosting at least needs the cake. It is my hope that leadership in meeting the problem of maintaining house officers will come in part from the teaching hospitals. What means of supplying house officers to all the hospitals needing them can we imagine? First, any system of governmental medicine would find a simple solution. I have another suggestion, i. e., development of professional house officers. A hospital staff might employ young physicians to work as house officers. The attraction of a future practice in the community might get a few physicians to work, but this incentive will not supply enough help. Could not the pay be raised? Salaries of $6,000 or more might be had in some places. As the service function is to be placed foremost, salaries sufficient to attract men should not be frowned on. As these men do much for the staff it is reasonable to have staff men contribute to the fund from which their salaries are paid.

A major adjustment to professional house officers would be in our own attitudes toward them. Perhaps the increasing role of physician anesthetists sets something of a pattern for this. They work almost entirely within the hospital and on patients of other men. They are appraised by their conferees as individuals and looked upon as colleagues. True they render individually a bill for their

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services, and we have no idea of permitting house officers to do that. A young physician might spend one year on such a house staff appointment and like it so well that he would wish to stay on for several years. I find no objection at all to such a practice. Youth is not an essential in a house officer. A period of one to three years could constitute a splendid background for general practice, and under certain conditions some of the specialty boards might even approve such experience as training, although that is immaterial to the possible ways of getting enough men to work as house officers. A thoughtful man so employed would learn much in such service whether board approved or not. Assistants to private physicians might appear to be a solution. In reality this requires that the physician-employer have enough volume and quality of material to interest a younger man. Common action by a hospital staff stands a better chance of success. Attempts to enlarge the general number of house officers in the nation would, I feel, be helped by dropping the requirement of internship for licensure. Almost anything that would enable the young doctor to get his license at an earlier age, in my opinion, would give him another year to follow his own career. Today he is not likely to enter private practice without considerable hospital experience.

Affiliation with a medical school is one way for a private hospital to become a teaching hospital and so to get a house staff. This arrangement may be feasible for a few hospitals located close to medical schools. There are major problems in carrying this out, however. The schools cannot permit their administrative officers and faculty to be spread out too far. Such a system can never be widespread. Among the ways hospitals have gotten along without interns is by employment of medical students as externs for night and evening work. No one is happy about this. The schools think the students pick up bad habits of observation and study and incomplete knowledge. The hospital has them only part time and for limited responsibility. The extern could make more money per hour at other work. Another radically different approach would be to greatly increase the annual number of medical graduates. Thus a larger number of physicians would assure employability of house officers paid by training or in money.

Use of procedures to make the intern's time effective will develop inevitably. Stenographic help, expansion of laboratory personnel, employment of "treatment nurses," methods of having part of the history taken by a clerk-typist, and development of forms for history taking all come to mind.

There is no way now to make the present system work to the satisfaction of all who seek house officers. To stand any chance of success any change that is proposed should be boldly planned and implemented. Our danger principally to the schools, is that we permit our lack o action to be itself an action perpetuating the present situation and imposing a progressive "service" load on the schools. I therefore urge you to look upon such matter as proposed elimination of internship for licensure and larger salaries for house officers as solutions no more radical than are demanded by the present need for adequate house staff.

25 E. Washington St.

SIGNIFICANCE AND IMPORTANCE OF THE INTERNSHIP FROM THE STANDPOINT OF THE SPECIALTY BOARD

David A. Boyd Jr., M.D., Rochester, Minn.

It is my assignment to discuss the significance and importance of the period known as internship from the standpoint of the medical specialty board. It is customary in allegedly literary productions for the author to deny the authenticity of either places, persons, or events contained in the account and to fix the responsibility wholly upon himself for anything that transpires after this sporting warning to the reader. In the present situation, it should be emphasized that the essayist is not speaking for the American Board of Psychiatry and Neurology, Inc., and cannot claim the following viewpoints as an official statement of policy of that board. It is even more necessary to emphasize that these statements are not authorized by the other specialty boards, and it is quite possible that different boards would have ideas in sharp and incisive disagreement with the ones expressed here. However, it is my belief that the general educational and philosophical principles underlying all medical education and all differing types of specialty training are in essential agreement regardless of the particular field of interest claimed by each specialty board. The basic educationa process must of necessity be the important common denominator underlying all types of medical educationa ventures.

It is not only illogical but intellectually impossible to defend any category that consists of only a vague generalization. The categories in the medical educational proces known as "undergraduate medical education," "internship," and "specialty training" are semantic generalizations designed to mean all things to all people. To each user the category means, as words did to Tweedledum just exactly what the user intends it to mean. Such categories, when viewed in the light of the whole educationa process, represent only crude and shifting boundaries that only mark off areas on the road that leads to competent and complete specialization. The concept of internship is only a convenient, but still a man-made, method of designating a certain part of this educational process, and, at present, it has so many sizes, shapes, and forms that it does not permit valid generalizations regarding its worth or uselessness. The disparate nature of various internships and the many varied practices throughout the country leave a commentator in the position of the frus-

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From the Mayo Clinic.
Read at the 51st Annual Congress on Medical Education and Licensure, Chicago, Feb. 7, 1955.

trated biologist who was never able to describe one of his most interesting specimens because after each observation the organism changed into something else.

MEDICAL EDUCATIONAL PROCESS

It is far more valid and rewarding to examine the whole medical educational process leading to competency in a specialized field rather than to attempt to defend a quite artificial and vaguely defined category created for our own convenience in thinking. There is much to support the contention that the medical educational process means a progressive narrowing of the mental horizon, with ever-increasing focusing of attention and interest and with progressively increasing avoidance and neglect of ever greater areas of general knowledge and understanding. It is somewhat germane to the present discussion to note that in the premedical course the wise student takes such courses as will enable him to cope successfully with the medical curriculum, even in spite of the urging of educators for a broader knowledge of the humanities and arts. In medical school there is acceleration of this preoccupation with an ever-narrowing segment of the spectrum of knowledge. If the medical student has already decided upon a field of specialization, he may become exclusively preoccupied only with the area in which he hopes to specialize.

For example, not long ago I was in the office of the administrator of a large university psychiatric institute. The administrator answered a telephone call, and his end of the conversation was made up largely of "yes, Dean" and "I understand perfectly, Dean," finally terminating with an empurpled "well, we certainly do not condone such activities and hereafter he will be informed that he is not welcome at our conferences." When he regained composure he explained that the conversation related to a medical student who in his junior year was continuing the pattern of his sophomore year, namely, cutting classes and demonstrations whenever possible to attend the seminars and conferences held at the psychiatric hospital. He added with exasperation, "We have had a perfect rash of undergraduate medical students who are aiming only for an office practice in psychotherapy. To them the medical school curriculum and the internship are only tiresome barriers standing in their way as they attempt to progress toward their goal of an office practice in psychotherapy. Even in psychiatric residency they are not adequate because they evade all possible contact with major psychiatric disorders because these are not the type of patients that they will see in their office practice."

It should not be necessary to expound concerning the even greater increasing of preoccupation and narrowing of interest of the trainee in a specialized residency training program. In such a setting the trainee's urge to become a successful specialist, his first exuberant and enthusiastic search for applicable specialized material in his field, and the exigencies and vicissitudes of examination and certification by the specialty boards—all of these lead him to an unwavering pursuit of highly specialized knowledge and techniques with single-minded consecration toward gaining those techniques and data that appear, at least to him, as directly applicable to his intended specialty practice.

THE TOTAL INDIVIDUAL

Such an educational machine may end up by spewing forth a full-fledged specialist in his particular field of interest, but it is also likely to produce an individual who is something less than a complete physician and a complete person. Somewhere along this production line there should occur a period of reemphasis upon the nature and function of the total individual who is the patient. The program of scholastically induced, progressively more tubular vision should encompass a period in which the peripheral visual fields are trained to see in a panoramic way, even though somewhat dimly. Between the years of medical school education and the years of highly specialized training there should be a period in which the embryo physician is again made to realize that he is dealing with total personalities operating in a highly complex social, cultural, and economic environment. There is no way that this can be brought home except by having him operate as a physician in general medicine with its unparalleled opportunities to see and understand somewhat the complexities of the total human being. The specialist is less than complete, however deeply he may see into his own field of medical interest, if he is completely unable to see, even though somewhat dimly, all of the other aspects of the human being as a patient and as a member of a complicated environment. It is not important whether this period or part of the educational process is called internship, but it is important before specialization is undertaken that there occurs such a reemphasis upon the totality of the human individual as he attempts to operate within the complexities of his environment, culture, and relationships.

But it is not enough that he be taken to the mountain top and given an opportunity only to see the panorama in all of its extensiveness. It is necessary that this opportunity be provided, but only with the sharpening of vision that is given by responsibility for the management of these complex human problems under competent supervision. In medical school years he observes the patient, sometimes with considerable intellectual interest, at other times with almost casual detachment. He records the history or watches an operation, but this represents a teaching exercise in which he does not bear responsibility for the outcome in any deep emotional sense aside from doing satisfactory classroom work. He may like the patient, he may even wish him well, but the actual responsibility that should spur the intellect, sharpen the senses, and move him morally and deeply toward grasping the problem at hand, all of these are lacking in many clinical clerkships.

An anecdote may emphasize this, although it is admitted that the story is unfair and probably unkind. There is a type of psychotherapy called nondirective, in which the therapist acts as an observer and does not direct the patient's productions, usually only paraphrasing the patient's statements in a noncommittal fashion. It is stated that a depressed patient visited his therapist one day stating, "I feel awful," to which the therapist said, "You must feel pretty bad." Said the patient, "I feel bad enough to die," and the therapist replied, "You seem to be quite depressed." The patient eyed an open window and said, "I feel miserable enough to jump out of the window and here I go." Suiting action to words, he hurled himself through the open window, to the murmur of the therapist, "yep, there he goes."

The person's sense of responsibility during the years of training for a specialty usually suffers from the same type of tubular vision mentioned above. The embryo trainee feels acutely responsible for the patient's condition insofar as it relates to his own field of specialization but often with complete oblivion to the total physical and emotional needs of the patient. The total needs of the patient are too often lost as the trainee concentrates his interest and sense of responsibility only upon those areas of difficulty that lie within the confines of his own specialized interest. I was asked to see a patient in consultation some 10 days after the patient had been struck in the face with a brick. The fractures of the bones of the face had received quite adequate attention, but on the 10th day after injury the patient showed manifestations that were interpreted as restlessness, uncooperativeness, and anxiety, and psychiatric consultation was requested. The possibility of concomitant intracranial damage had not been considered, and it was quite obvious to even the psychiatric eye that the patient was dying from a subdural hematoma. As a matter of fact, he did die within the hour, but fortunately with his fractures in a state of perfect alignment.

Therefore, to the plea noted above for the panoramic vision should be added the most important leaven of responsibility for the total needs of the patient. A period intervening between the nonresponsible medical school years and the highly specialized responsibility of specialty training should be utilized for the reemphasis of the totality of the person and the ingraining of attitudes in the physician concerning his moral responsibility for not only seeing but managing, or causing to have managed, all aspects of the patient's life difficulty. This can be accomplished only if he has been trained to see them and it has been impressed upon him deeply that it is his moral obligation to see that these needs are met.

Therefore, in reviewing the educational process ending in specialty certification, it would appear to me that between medical school years and specialization, ther should be a period of experience in recognizing and man aging the total needs of the patient under supervision. I present-day internship provides this opportunity in meaningful way, the internship is a necessity and shoul be retained at all costs. If the present-day internships d not provide such an opportunity, they should be modifie at once so that these most important needs, so necessar to the development of the complete physician, are m fully and thoroughly.

102 Second Ave., S.W.

FUTURE OF THE INTERNSHIP FROM THE STANDPOINT OF THE GENERAL PRACTITIONER

William B. Hildebrand, M.D., Menasha, Wis.

From the presentation of the material and opinions presented here today by my distinguished predecessors, one receives the impression that there is no unanimity of opinion on the present status and future of the internship in the present scheme of medical education. This lack of unanimity can probably be traced to the wide divergencies of opinions concerning the purposes of an internship. Others hold that it no longer serves any purpose and should be abandoned.

FOUR VIEWPOINTS

First of all, there are those who feel that the internship is merely a preparation for the beginning of a residency, and, as such, the internship should be a straight one rather than mixed or rotating. The proponents of this theory are, of course, men who limit their practices to a very narrow special field and who feel that, in their particular realm, a rotating or a mixed internship would be a waste of time. To those who hold such views, the American Academy of General Practice, which I represent, would say that the greater knowledge that a young physician can obtain of the entire patient as an entity, the better specialist he will be. Such training cannot be obtained in a straight internship.

The second group presenting a negativistic opinion toward the internship constitutes a large group of medical educators who feel that the internship no longer serves useful purpose and should be discontinued. In 1934, 1 medical schools required an internship as a prerequisi to graduation. In 1954, only two schools had this r quirement. The change in requirement certainly ste from basic changes in the pattern of medical educatio The system of bedside teaching through clinical cler ships in the last two years of medical school is practical universal, and thus, even before graduation, the stude has become familiar with various hospital procedures a bedside techniques, formerly not obtained until the st dent had graduated. Another factor that creates dou in the minds of many medical educators as to the value an internship is the ever-increasing number of hospita approved for internships with very questionable educa tional value. To the proponents of these theories, would answer that the mere removal of the internshi from medical education would not solve anything bu would only create more problems.

The third group, and a group that I am afraid is rathe large, are those who have no concern whatsoever with the educational value of the internship and contribute nothing to the intern's education but are primarily interested in what the intern can do to help them in their private practices. For that group, the intern is expected to perform all of the chores in the hospital, including starting infusions and transfusions, catheterizations, holding retractors, watching the progress of obstetric patients,

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President, American Academy of General Practice.

Read at the 51st Annual Congress on Medical Education and Licensure, Chicago, Feb. 7, 1955.

and so forth—all being done for the benefit of the staff and of little value to the intern once these techniques have been learned. You and I know of many doctors and many hospitals whose attitude towards interns is what and how many services can be obtained from them. With the ever-increasing number of hospitals being admitted to the internship program, I hazard a guess that many of these fall into the above category and lack even the bare essentials for an approved internship.

The fourth and last group, and one for which I speak, has always firmly advocated and supported the rotating internship as the first step in the graduate training of the young physician, especially those who plan to enter the field of general practice. Someone has said, and wisely so, that the essential purpose of the internship should be to gain practical experience for the young graduate in medical fields under competent supervision.

PLANS FOR INTERNSHIP PROGRAMS

Since there are many more internships than interns and most internships are rotating in character, the American Academy of General Practice has been much more concerned with the undergraduate programs designed to interest and prepare students for careers in general practice and with the training following internship rather than with the internship itself. However, it would seem, with 100,000 of the 160,000 practicing physicians in the country, at the present, engaged in the general practice of medicine—and, if present trends can be taken as accurate, the ratio will be maintained for some period of time—and with so much of the medical care of today therefore being dispensed by general practitioners, that the internship problem is a problem for the entire profession to solve, and it had better be accomplished with the thought of the general practitioner as paramount when a solution is reached. Some universal plan that will provide the future general practitioner with the greatest possible educational opportunities and privileges in the time allotted to him and that will provide better general medical care in the long run must thereby be worked out by all concerned.

May I then present in outline two possible plans that would seem to fit the above criteria, each somewhat different but both accomplishing the same eventual purpose. Both are predicated on the theory that two years of supervised hospital study is the absolute minimum required for the practice of medicine in any form.

Five Year Program.—The first plan is not original, but it is the plan of Dr. Roscoe L. Pullen, who is now dean of the school of medicine of the University of Missouri. He feels that the fourth year of medical school should be placed on a 12 month basis, with a month of vacation for each student staggered throughout the year, the vacation to be assigned to the needs of the hospital. All fourth year students would be placed within the teaching hospitals on a full-time basis as junior interns or some other designation appropriate for their position. The students would be rotated through the major fields of internal medicine, surgery, obstetrics, gynecology, and pediatrics. They would attend the outpatient department, the operating room, and the delivery service and in every sense follow through on the patients just as they would during the fifth or regular intern year. In view of the number of medical students now graduating, it would be possible to give them smaller patient ratios than are presently assigned to interns. By this means they would be able to attend scheduled classes once or twice daily in the subjects that are usually taught during the fourth year of medical school; namely, dermatology, ophthalmology, otolaryngology, radiology, and so forth. It would seem desirable that the students either live within or near the hospital, be subject to call just as interns now are, and accept the responsibilities thereof. These matters would naturally need to be remanded to each teaching hospital to determine whether or not it could provide housing and other facilities. If the teaching hospital could not accept all the students at once, then affiliations should be completed between the medical school and the hospitals of its community in order to assist these hospitals with intern quotas.

Then, in the fifth year, the graduate would enter the internship proper, that is, the so-called senior internship, which should be a continuation of the fourth year insofar as curriculum planning is concerned; but the fifth year intern would now be permitted to enlarge his activities and responsibilities. A curriculum would be designed that would best prepare him for his ultimate objective, whether general practice or entrance into a specialty. The internship must be regarded as an important phase of medical education, and the intern should be accorded the consideration he deserves.

Certainly, a great number of problems would immediately arise if such a plan were introduced. First of all, the medicolegal requirements of each community would need to be taken into consideration. Undoubtedly, the fourth year student could not be expected to take legal responsibility for any case involving possible litigation. Secondly, the issue of preceptorship would have to be entirely reconsidered. Thirdly, there would need to be a great change as far as the curriculum for the third and fourth years are concerned; this would then have to be integrated into the fourth and fifth years. Next, the question of assigning students to community hospitals not strongly affiliated with medical schools for part of their services would certainly have to be considered.

Of course, there are objections to such a plan as this. The responsibility for internships would be relegated more and more to the medical schools, which, however, is really happening, because the trend in postgraduate education is to the effect that medical schools should accept greater responsibility in all phases of medical education, including graduate medical education. This might mean that fewer hospitals would be approved for internships and fewer vacancies arise, for the medical schools then could effect affiliation only with the hospitals controlled or influenced by them. However, this might be a good thing, because experience has shown that probably the most effective graduate medical teaching takes place in an academic atmosphere. There would be no possible solution to the shortage of interns in outlying community hospitals under this plan. Whether the fifth year intern continued to take his training in his hospital or whether he would move to a hospital in a neighboring or distant community, as is now done in many instances, would also have to be taken into consideration.

There are many problems that would have to be worked out in this proposal, but likewise the problems would arise in any fundamental change. Dr. Pullen, however, believes—and his views are shared by many medical educators—that such a program would, as he states, enrich the educational value of the fourth year of medical education as well as the internship. It would certainly enable the graduate to increase his clinical training, and that fact alone should justify consideration of this or any other suggestions for improvement of the internship.

Two Year Internship.—The second of these proposals stems from a recommendation made by the commission on education of the American Academy of General Practice at its first meeting in 1947. This was that (1) all hospitals having internships, facilities, and training programs provide special training for doctors planning to do general practice; (2) the first year rotating internship be continued; (3) a second year internship or residency be arranged to provide the following subjects or their equivalents: (*a*) three months of general surgery and fractures; (*b*) three months of medicine, including one month of contagious diseases; (*c*) three months of obstetrics and pediatrics; (*d*) three months elective of any of the following subjects: clinical psychiatry, gynecology, laboratory, x-ray, ear, nose, and throat, or urology; (4) the second year of the internship be recognized as a residency in general practice and that a suitable certificate be presented the trainee for satisfactory completion of such training. At its 1950 annual assembly, the congress of delegates adopted the following resolution:

> Resolved, that this group is cognizant of the fact that services of interns are being dissipated in some hospitals because too much of their time is devoted to non-clinical activities and work that is not directly connected with the practice of medicine. To correct this situation, the Committee on Education of the American Academy of General Practice suggests the following. That an attempt be made to evaluate smaller hospitals which need interns and residents with the idea of establishing qualified and helpful education to these men and allow them to participate actively in the work of general practitioners throughout the nation. The committee believes that the situation would be materially improved if the Council on Medical Education and Hospitals of the A. M. A. makes an effort to improve either general practice residencies or second year internships, whichever they are called, in smaller community hospitals.

In the years following this early recommendation and this latter resolution, nothing has come upon the horizon to change the thinking behind it. Such a plan of two years' training would have some objections. It would prolong the training of men not going into general practice after the second year unless the second year intern or general practice resident would be given credit for the first year towards specialty board certification. There is certainly merit in advocating such a step, as it would place disease before the young doctor as a single discipline rather than the concept of disease in isolated tissues, cells, or organs. Certainly, complete reevaluation of hospitals acceptable for the implementation of such a program would have to be undertaken. However, such has been done before and could be done again.

Such a program would place increased teaching responsibilities on the staff of nonteaching hospitals, because such a program would require for implementation house beds now found in many community hospitals that are not engaged at the present in an internship program. There are just as many or more factors in favor of such a program. It would first of all provide hospitals with considerably more full-time medical assistance than is now available. Secondly, it would, if properly organized, provide the young doctor with worth-while experience in the practice of medicine. Third, such a plan would relieve, in part, the present shortage of interns. At the present time there are over 3,000 more approved internships than interns available. Fourth, it would, as stated above, give the future specialist a concept of an over-all picture of disease as it affects all parts of the body, a concept not now found in straight internships or residencies in specialties. Such participation of future specialists might be contingent upon whether or not specialty boards gave credit for the second year of internship or general residency, whatever it would be called. Lastly, it would result in a higher level of general medical care, for it is axiomatic that the greater amount of training given to a young graduate, the better he will be able to diagnose and manage disease in his private practice.

SUMMARY

A certain anthropologist recently in a lecture implied that an internship in the practice of medicine was similar to customs in primitive tribal behavior where the initiate, previously callow and uninformed, was introduced to the facts of life in a rather crude, if not vulgar, experience and that certain barbarities persisted in the ceremony, including humiliation and even pain for the initiate. Certainly, rather than such an appraisal of an internship, there is one that is to be greatly preferred and that is a description given by the beloved author of "Confessio Medic." He states:

> Great hospitals are something more than blocks of buildings where patients are doctored and students and nurses taught. I do believe in the spirit of the place. To me the *Genius Loci* is really there and the *Religio Discipuli,* The student's obedience to the spirit of hospital life, is a very important part of his education; or, will anyone say that the *Genius Loci* is all nonsense and that a great hospital is only a big machine? My answer is that I know what I am talking about. Sickness as Lucretius says of impending death, shows us things as they are. The mask is torn off. The facts remain. That is the spiritual method of the hospital. It makes use of sickness to show us things as they are. To a young man of good disposition, this plunge into the actual flood of lives is a fine experience.

Certainly, the internship is a natural transition into the responsibilities of residency and of practice. Let us keep it, but let us enlarge it and let us make it better.

216½ Main St.

FUTURE OF THE INTERNSHIP FROM THE STANDPOINT OF THE STATE LICENSING BOARD

Stiles D. Ezell, M.D., Albany, N. Y.

The initial reaction of the licensing boards to a prosal to abolish internships would be one of opposition. is a long-standing opinion that the internship provides period of experience involving responsibility at a level gher than the clinical clerkships, and, assuming the exrience is properly supervised, the internship represents e terminal point of interest in the education and traing of the great majority of recent medical graduates sofar as licensure requirements are concerned. Alough modern medical education may have narrowed to me extent the gap between the purposes of educational d licensing examinations, it is important to recognize at a certain differentiation still exists. Very broadly, is represents the contrast of factual knowledge and the e of judgment as applied to fitness for practice. It has en the traditional attitude of those states requiring an ternship, and perhaps the same for those not requiring that the internship experience contributes a certain deee of maturity and fitness not to be expected at the date graduation.

It might be expected that the rotating internship would me closest to meeting the requirements of the licensing ard, since its examination normally covers all major anches of medicine. As a matter of fact, there is no iformity in the present group of 27 states requiring an ternship prior to licensure. Only 11 require a rotating rvice. Residency training or actual practice may be bstituted in other states. These facts would only lend eager support for the internship as such, but there is e added fact that, according to the 1953 report of the ouncil on Medical Education, more than 99% of all merican graduates do take an internship. Hence, from e viewpoint of the medical graduate, there appears to ist a reason for serving an internship. It is doubtful if e policy of the national board in requiring an internip would influence 99% of American graduates.

If an attempt were made to explain the lack of unirmity in the various states as to the requirement of inrnship, several confusing opinions might emerge. The 1 states not requiring an internship may simply take it r granted that 99% of graduates will continue to take n internship, or that the 1% who do not is insignificant. may be their attitude that the medical schools prosly train a man to practice medicine and that an internip does not provide any appreciable educational or aining experience beyond graduation. On the other and, it may be that the requirement of internship goes ack in origin to the time when there was quite some unertainty as to the quality of education in some medical hools; or, it might be aimed at the 1% of graduates who ould not take an internship.

Perhaps the more accurate answer to the apparent ck of uniformity in the attitude of the licensing boards n the internship question is that they have not properly valuated its position in modern medical education. In terms of the broad intimations of the first World Conference on Medical Education, the internship represents the initial phase of continuation education. Thus, it serves not only as a supplement to basic undergraduate education but also as an essential introduction to postgraduate education. It may well be that the solution of the internship problem will depend upon acceptance of the concept that the internship is both an educational and an essential experience.

No licensing authorities could find fault with this idea, though some of them may be confused by the present status of the internship. The apparent inability to adjust rapid rotation to continuation education detracts from its value in much the same way the development of clinical clerkships and residency training overshadows its importance. Some of the boards may contribute to the confusion by failure to recognize the internship as an essential experience. Some may think of it only as a hospital service, and some may not differentiate between education, experience, and service.

APPRAISAL

In a more critical appraisal, the licensing boards may properly ask whether the internship is now a satisfactory period of training and experience, whether the general supervision of interns by the resident staff is an acceptable substitute for the attending staff, whether internships and residencies should not be entirely separate services, and whether the approval of internships should not be more critically approached.

Those of us in licensure who have to deal with problems involving hospital training and experience in terms of supplementary educational value consider there are two primary reasons for the present status of the internship: 1. The development of efficient clinical clerkships has moved much of the purpose and value of the internship back into the medical school. 2. A large number of approved internships do not provide a satisfactory educational or training experience. If the licensing boards are to continue their interest in maintaining high standards in licensure, it is essential that they maintain an active interest in the initial hospital experience of the recent medical graduate. Hence, they have an interest in the quality of the internship. The viewpoint of licensure is that the minimum concept of the internship demands that the examinee demonstrate a certain level of competence in definitive diagnosis and treatment.

No representative of licensure could avoid the problem of the foreign graduate as applied to hospital experience. For many of those graduates, the internship may be the first actual contact with patients. It should be for this

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Secretary, New York Board of Medical Examiners.

Read at the 51st Annual Congress on Medical Education and Licensure, Chicago, Feb. 7, 1955.

group both an educational and a training experience. Their first year should be restricted to hospitals capable of providing educational training, and there should be a definite fixed ratio of American graduates in every internship program accepting them. At the present time, no definite educational quality can be credited to the internship of the foreign graduate in any hospitals, except in rare instances. The one year rotating internship is grossly inadequate for the major needs of this group, in both orientation and patient management. Certainly this is a group that should not be rapidly rotated, and the ideal service would be a well-supervised rotating service of two years, unless there has been a period of formal education preceding. The internship for this group should represent a level of supervision comparable to the clinical clerkship.

SUMMARY

Licensure's only logical attitude toward the internsl is one of vigorous defense. The internship, as either educational or a training experience, represents an i portant phase of the area of medical education invol in the licensing examination. The interest of licensur hospital experience extends to the level of definitive di nosis and treatment. The problem of the foreign gradu should not be overlooked. As viewed by licensure boa one of the three major components of modern med education, namely, initial continuation education as r resented by the internship, is in urgent need of recon eration. For the large group of graduates who come fr outside the United States and Canada, the internship necessity.

23 S. Pearl St. (7).

FUTURE OF THE INTERNSHIP FROM THE STANDPOINT OF THE MEDICAL SCHOOL

John McK. Mitchell, M.D., Philadelphia

It has been suggested that the internship as a separate phase of medical education should be discarded and that the experience gained during this period should be divided between the clinical clerkship on one side and residency training on the other. At one time, the internship provided not only the first contact with patients but also the final step in preparation for practice. Little wonder then that it came to be regarded with high esteem. However, as the clinical clerkship was introduced into medical school teaching, it gradually evolved into training that closely simulated that which the intern had received in at least the earlier months of his service. Then, with the development of residency training programs in preparation for specialty practice, the resident began to assume some of the responsibility for the care of patients formerly assigned to the intern. Thus, the internship lost much of its earlier glory as the alpha and omega of formal clinical training.

PROBLEMS OF INTERNSHIP

It will be freely admitted by all who are familiar with the modern internship that it has many faults and that some of these faults result from pressure of the clinical clerk below and the resident above. This situation is generally considered to result in too much supervision, too little responsibility, and insufficient work with patients. In answer to these assumptions, however, we have available the results of a questionnaire on the internship submitted by an advisory committee of the Council on Medical Education and Hospitals to graduates of the 1937 and 1947 classes. Considering the latter class only, as closer to the present, the following results should be noted: 1. Eighty-eight and nine-tenths per cent thought that the presence of a residency training program in their hospital had improved the value of the internship, against 4.9% who felt that it had tracted. 2. Seventy-two and eight-tenths per cent lieved that the presence of clinical clerks improved internship, while only 1.2% considered it detrimer 3. Seven hundred eighty-eight checked lack of su vision as a major defect in their internship, as oppose 684 for lack of responsibility. 4. Seven hundred forty- thought their patient load too heavy, while only 71 c sidered it too light. 5. Lack of supervision and too he patient load stood first and second as faults, while lac responsibility and insufficient patient load stood 4th 15th respectively. This evidence indicates strongly the squeeze on the intern from clerk and resident is the sole or, indeed, the major defect in the internship is my belief that it has become the main whipping for the ills of the internship merely because it is the n obvious one.

The internship does, nevertheless, present a vex problem, as is attested by the number of committ charged with studying it and by the attention devoted t in articles and meetings. The proposal that the interns should be given up and its duties divided between clerkship and the residency would appear, at first glar to represent an easy and practical solution to these pr lems. It is my own belief that this plan is neither easy practicable, and that, on the contrary, the internship (1) a necessary and integral step in the progression fr student to practitioner, (2) now in its proper place, a (3) can actually be discarded in name only.

STEPS IN MEDICAL EDUCATION

In order that the exact place of the internship in t American plan of medical education may be clearly u derstood, a brief résumé of the successive steps in th process may be helpful. The first or premedical peri consists of general education in college, with the inclusi of certain prescribed courses necessary as forerunners medical education proper. The next step consists of medi

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Read at the 51st Annual Congress on *Medical Education and Licensure*, Chicago, Feb. 7, 1955.

cal school training and is subdivided into two relatively equal periods, one devoted to the study of basic science material and the other to clinical training, generally referred to as the clinical clerkship. The third step of graduate education or hospital training is likewise subdivided into two periods, though they are usually unequal in duration, the internship and residency training. Three of these subdivisions, the clerkship, the internship, and the residency, should be examined more closely with reference to the result if the internship is discarded and merged with the other two.

The Clinical Clerkship.—The clerkship represents the first step in the application of basic science knowledge to the care of patients. It now occupies the last two years of medical school and is divided roughly as follows: (1) inpatient clerkships in medicine, surgery, obstetrics-gynecology, pediatrics, and psychiatry; (2) outpatient experience in the above services and in the various medical and surgical specialties; (3) preventive medicine and public health, often through home care and similar plans; (4) electives; (5) research; (6) clinics, conferences, and lectures to supplement the above experience and tie it in with the appropriate basic science background.

The Internship.—In one sense, the internship is merely a name for the first year of graduate or hospital training. It represents that period when the student becomes a physician, when his primary duty is responsibility for the care of the patient, when reading and attendance at conferences, clinics, lectures, and other educational experiences must ever be sacrificed to the call of the operating room, the demands of the emergency or admitting ward, and the needs of patients. While the internship is an educational experience, nevertheless, the emphasis must inevitably be placed on service to the patient, for that is the very reason for the existence of the hospital, and the intern is the servant of the hospital. The internship represents a step that must be taken and, when properly designed, merges very nicely into the next step, that of residency training.

The Residency.—A well-planned residency training program picks up where the internship ends, and, through graduated responsibility for the care of patients and the acquisition of skill in the performance of technical procedures, brings the resident to a point where he can be certified as having acquired the training and experience necessary to the practice of a given specialty.

THE PLAN TO DISCARD THE INTERNSHIP

Effect on the Clerkship.—There are vital differences between the duties and responsibilities of the clerk and the intern. As stressed above, the first duty of the intern is to the patient, and this must be so. While it is very important that the clerk should feel responsible for following every event in the progress of his patient throughout his hospital course, and in many instances he may and does miss other assignments because of this, nevertheless, if by participating in these other activities he fails to be present at some crucial moment in the patient's illness, the loss is only to the student, for he is not directly responsible for the treatment of the patient. On the contrary, the intern or his relief must be on the scene 24 hours a day, seven days a week, 52 weeks a year. It is simply impossible for anyone to fulfill this service obligation and at the same time meet the demands of medical school education, one or the other will suffer seriously; and, since the patient cannot be neglected, it is quite clear that it is the medical school work that would suffer most.

When the third year clinical clerk goes on the ward on any service, he is totally unprepared to assume the responsibilities now rightfully delegated to the intern, for his training has not brought him to this point. It becomes clear then that the student must spend his third year as an inpatient clinical clerk, in order that he may be equipped to undertake many of the responsibilities now belonging to the intern. It follows that the clerk-intern work must then be concentrated in the fourth year. In order to do this work properly, under the specifications laid down above, the student would have no time for the other activities now ordinarily assigned to the fourth year, namely: (1) a summer period that offers an opportunity for many experiences valuable to the eventual development of the physician, such as preceptorships with practicing physicians, research, junior internships in rural and specialized hospitals, industrial medicine, public health work, and special clerkships; (2) outpatient experience, which gives the student a practical introduction to a side of medical practice he does not see in the hospital (included in this is his first real training in the many medical and surgical specialties); (3) electives, which may encompass a wide variety of subjects; (4) research under the close supervision of a skilled investigator; (5) refresher and correlation work in the basic sciences; (6) home care plans; and (7) time for reading and study.

We must face squarely the practical aspects of this plan to do away with the internship as a separate phase of training. These so-called clinical clerks with intern duties would be under the residents. Human nature being what it is, the residents would unquestionably load on them the things they do not want to do themselves, and these would be the time-consuming chores offering the least medical return to the doer. One of the defects of the present internship stems from this very procedure, and it will not be cured by moving the internship into the fourth year of medical school.

In the final analysis, this plan of integration will result not in discarding the internship but in abolishing the fourth year of medical school. I, for one, am not willing to pay this price, for the gains are infinitesimal when compared with the losses. Further, having accomplished this, we would be right back where we are now so far as the internship is concerned, while we would be trying to crowd the present four years of medical school into three years. The clinical services in the hospitals would almost certainly be dissatisfied with the training of this new breed of interns and would press for more clinical training in the first two years of medical school. Even now, basic science teachers are troubled by the encroachment of clinical work on their time; to shorten it further would, in my opinion, be a grave mistake.

Effect on the Residency.—Let us assume for the moment that the proposed plan was adopted, while the fourth year in medical school was retained with certain modifications. In this case, the new graduate would enter directly on his residency duties, meaning, in the vast majority of cases, his specialty training. Is this not exactly what he does now in a straight internship, for, though called an intern, he is actually starting his specialty training. Hence, this plan to discard the internship is in reality merely a plan to do away with the rotating internship. Referring again to the questionnaire filled by graduates of the class of 1947, we find the following answers: 1. Eighty-four per cent had taken a rotating internship, against 10.9% in straight services. 2. Of those who took a rotating service, 93.5% would do so again if they had a free choice. 3. Even more significantly, of those who had straight internships, only 60% indicated that they would take the same service again, while 36% declared that they would shift to a rotating service. It is my strong conviction that the rotating internship is too valuable a portion of medical training to surrender, and that conviction is strongly supported by the above figures.

CONCLUSIONS

Therefore, it is my conclusion that the internship does have a very real place in modern medical education and that it is now where it belongs, the first year of hospital training after leaving medical school. Call it what you will—internship, first year residency, junior residency, assistant residency—it remains the first year of hospital training. However viewed, there must be a first year of such training, and so one can actually do away with the internship in name only. There may be some medical schools in which the fourth year is so weak that it could be replaced with internship work without too much loss, but these are the exception, not the rule. There may be internships in which the level of training is not as high as that received by many students during their clerkship. The solution to these problems lies not in abandoning the fourth year or the internship but in having those medical schools review and improve their senior year, while the hospitals design their internship to fit the present level of training of medical school graduates.

36th Street and Hamilton Walk (4).

DOES THE INTERNSHIP HAVE A PLACE IN MODERN MEDICAL EDUCATION?

Edward H. Leveroos, M.D., Chicago

In view of the development of well-organized and effectively conducted junior and senior clerkships in the majority of medical schools throughout the country and the marked expansion of the residency program, both in medical school–connected and nonaffiliated hospitals, the concept of the internship as a separate and distinct phase in medical education is difficult to justify, except perhaps as a matter of tradition. There is little question that responsibilities and duties formerly those of the intern have been increasingly delegated, on the one hand, to medical clerks and, on the other, to residents in the university hospitals and to the resident staff in nonaffiliated institutions.

There are still some areas that have been and remain the traditional province of the internship. These include indoctrination in the less technical yet highly important human relations aspects of the practice of medicine, as well as instruction in certain techniques and procedures ordinarily taught during the internship year. Considering the time and expense involved in the education and training of a doctor and the returns of the internship year in terms of adding to his professional knowledge, or of providing medical service to the community, however, it is at least open to question whether or not such a year any longer should be required. If, in fact, the period of intern training cannot be defended in terms of adequate return to the young physician, a premise that is open to question, then the internship should be considered an anachronism and, as such, abolished. In the considered opinion of many educators, medical and nonmedical, the internship no longer serves an essential purpose, and consequently it should be integrated into medical education and training at the undergraduate and residency levels.

CONSIDERATION OF THE PROBLEM

The following points are germane to any consideration of the problem.

Clerkships.—The training and educational content of junior and senior clerkships will necessarily have to be broadened in many instances to furnish the graduate with the background that will enable him to assume greater responsibilities on completion of the undergraduate curriculum. Clerkships in a number of schools have already reached the point at which the responsibilities of the senior clerk vary little if at all from those ordinarily delegated to the intern. A further expansion of the scope of the clerkship is a necessary prerequisite to the elimination of the internship.

Licensure Requirements.—The completion of a year of internship is a requirement for licensure in a number of states. Acceptance by the examining boards of these states of a year of hospital (residency) training in lieu of the internship will be a necessary step in the elimination of the internship as such.

Residency Training.—A majority of the examining boards in the medical specialties either require or recommend a year of internship as a prerequisite to residency training. With the internship eliminated, some boards may find it necessary to increase their training requirements either by broadening the base of experience in the first year of residency or by the actual addition of another year of training in the specialty. With clinical clerkships developed to a high level, it should be possible in

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Read before the 51st Annual Congress on Medical Education and Licensure, Chicago, Feb. 7, 1955.

most specialties to provide for a direct transition from undergraduate to graduate (residency) status without the need of any preliminary period of orientation. The exact course to be followed can only be determined by studying of the question as it relates to each specialty.

Hospital Appointments.—Appointments to the majority of first year internships are presently made through the National Intern Matching Plan, as sponsored by various professional and hospital groups, including the American Medical Association. The same matching procedure can be followed in making house staff appointments to first year residencies. The elimination of the internship would not then affect the present matching procedure but rather would result in a change in the plan to apply to residency or other first year house staff appointments rather than internships.

Graduate Training for General Practice.—A major objective of the internship in the past has been to provide an educational experience in preparation for the general practice of medicine. It has been the opinion of the Council on Medical Education and Hospitals, furthermore, that a minimum of two years of hospital experience is necessary for the present-day practice of medicine. A program of training designed to meet the needs of graduates planning to enter general practice will necessarily, therefore, have to be developed if the internship is eliminated. The content and scope of such a program will require thoughtful consideration if the future family doctor is to have a background of graduate education and supervised experience equal to his responsibilities.

There is some justification for considering the development of two types of residency programs for general practice: one, a period of basic residency training in such fields as medicine, pediatrics, and obstetrics; and, secondly, an advanced period of training to include general surgery and some of the surgical specialties such as operative gynecology, orthopedic surgery—particularly fractures—urology, and perhaps others. The length of these programs should be of sufficient duration to give the resident sound fundamental training in the divisions of medicine in which he plans to practice.

Military Service.—Under the present law governing military service, a physician subject to call is ordinarily deferred for the period of his intern training only. The principle of deferment for completion of a year of hospital experience can be applied with equal force to first year residencies with the elimination of the internship. With the needs of the military services for physicians trained at different levels, it might in fact simplify the procurement procedure if deferment were granted in terms of years of hospital experience rather than on an artificial division of internship and residency training.

House Staff Terminology.—For purpose of clarity, some standardization of designation for members of a hospital house staff would seem to be desirable. Such a system should be simple and rather generally applicable. One such would be:

Level	Designation
1st year	Junior resident
2nd year	Assistant resident
3rd year	Resident
4th year	Senior resident

Obviously some variations in this terminology would be necessary, particularly in those specialties in which training is ordinarily of less than three years' duration, e. g., pediatrics, in which the first year resident might properly be designated as the "assistant resident" and the second year man as "resident."

House Officerships.—At the present time there are more than 5,500 hospitals that are not approved for either internship or residency training. In addition, a number of hospitals that have been approved fail to attract a house staff. With the internship eliminated, it is evident that some hospitals now approved for intern training will not be in a position to qualify for approval at the residency level. The question arises as to what this large group of hospitals can do to provide the essential services ordinarily performed by members of the intern-resident staff. The suggestion that these hospitals appoint full-time house officers on a salary basis has been advanced. Appointments of this nature, of course, have been and are being made in a number of hospitals throughout the country. In many of these hospitals, however, a clear differentiation between service and education has not been made. Appointments are offered under the guise of providing an educational experience when, in fact, the training aspects are negligible or nonexistent.

A forthright recognition of such appointments as service assignments would, I believe, be salutary. It is probable that an appreciable number of young graduates would seek such appointments, recognizing the fact that the educational returns were incidental, if the salary levels were adequate. Thus, a young physician on completing his military service or perhaps a year or two of residency training might want to build up his financial position by taking an appointment of this nature with the thought of establishing a practice in the community or deciding on his future course. A criticism of this approach can be made in that such arrangements in effect encourage the practice of medicine by hospitals. This argument is somewhat specious, however, since a number of hospitals have been making such appointments for many years, with no evidence that they encroach on the practice of medicine in the community.

As a further safeguard, however, I would like to offer the suggestion that it might be considered advisable, if not more equitable, that the medical staff of the hospital contribute directly to an educational fund over which they, the staff, rather than the hospital, would exercise control. The resident's salaries might well be paid entirely from this fund, while the hospital would provide the resident with board, room, laundry, and the usual perquisites. Such an arrangement would recognize the fact that the medical staff is the primary beneficiary in having a house officer on duty and further, that the medical staff and not the hospital exercises primary responsibility for the house officer's work in the hospital.

There are several other methods that have been utilized in providing essential services without a house staff. They are outside the scope of this discussion, however, since they are essentially methods for assigning responsibility on same type of rotation basis to members of the active and courtesy staffs rather than to residents or house officers.

PROCESS AND EFFECTS OF CHANGE

It is axiomatic that a fundamental change of this nature involving medical education at all levels should be adopted only after thorough discussion and careful planning, with a long enough period before becoming effective to allow for an orderly adjustment by all groups concerned. A five year transitional period should be long enough to permit of a reorientation from the present status to one in which the internship has been eliminated with a minimum of disruption to present house staff programs. While the primary consideration in the adoption of this policy is the value of the internship as presently organized in terms of return to the young graduate, an important factor in its consideration should be the consequent reduction of the time spent in the formal education of the doctor. If the internship is abolished without a commensurate increase in residency training requirements in most if not all specialties, a significant savings in "man years" will have been achieved. The reduction in time spent in preparing for practice will have the effect of adding to the physician population several thousand additional doctors, the number depending upon such increases as may be made in other training requirements, particularly those of the examining boards in the medical specialties.

It can be further pointed out that the adoption of the proposed policy will mean that the majority of physicians will spend an added year in professional service at a fully or partially trained level rather than as an intern. All of these factors lend support to the position that the internship should be abolished, assuming that the basic contention is sound, i. e., the internship no longer provides sufficiently advanced educational opportunities and experience to justify its continuation as a separate and distinct phase of medical education.

535 N. Dearborn St. (10).

Venereal Disease Is Still with Us.—As the first skirmishes against syphilis appeared won, a sense of false security developed, even among physicians; and in 1950 Congress began drastic cuts in the funds necessary to sustain the essential activities of the program. . . . As a result of premature de-emphasis, 34 state health departments now consider their venereal disease funds insufficient to permit effective case-finding and to insure a continual fall in rates. Supporting their belief is the fact that during 1954, 20 states experienced a rise in reported syphilis rates and 36 a rise in gonorrhea. Preliminary evidence suggests increases in additional states during 1955. . . . The optimistic belief that penicillin alone can erase venereal diseases needs to be dispelled. Case-finding and case-holding activities must be the duty of all who undertake the responsibility of managing venereal disease. The doctor who treats cases and investigates source and contacts, or refers them to the health department, promptly contributes to better control. The doctor who treats cases but neglects source and contacts breaks a significant link in the chain of infection and does a disservice to the individuals harboring unknown disease.—A. L. Van Duser, M.D., Venereal Disease Is Still with Us, *Wisconsin Medical Journal*, May, 1955.

CLINICAL NOTES

UNILATERAL TRIPLICATION OF THE URETER

REPORT OF A PATIENT WITH THREE RENAL PELVES AND THREE URETERAL ORIFICES

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and
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The frequency of the recognition of anomalies of kidney and ureter has greatly increased with the diagn tic aids at the disposal of the present-day physici Unilateral triplication of the ureter is one of the l common of these anomalies. Before discussing the i dence and presenting a survey of the literature, a def tion of true triplication of the ureter is necessary. often this entity has been confused with "trifid urete and "triplicate fused ureters." In attempting to us single phrase to describe the unilateral occurrence three ureters, each connected with its own pelvis in kidney and having its own ureteral orifice in the blad we had been using the term "complete" triplication the ureter. Narath [1] correctly called our attention to fact that the words "complete triplication of urete were not descriptive of the abnormality we had in mi As an example, he stated that the term "complete" sir ureter does not necessarily connote the existence of renal pelvis nor describe the location of its orifice. argued that one may speak of duplication, triplicati or quadruplication (Campbell Begg) but none of th succinct terms define whether or not each of these ure have its own renal pelvis and its own ureteral orifice. condition that we wish to discuss is the unilateral ex ence of three ureters each with its own renal pelvis its own ureteral orifice in the bladder.

INCIDENCE

A review of the literature reveals four cases of so-cal triplication of the ureter, one each reported by Lau Henline (1931),[2] Chwalla (1935),[3] Burt, Lane, Hamilton (1941),[4] and Woodruff (1941).[5] Howe only the latter case meets our definition of the requi ments of true triplication (Narath [6]). Lane and Han ton's case comes very near to meeting the definition, in their case one of the three ureters emptied through orifice into the vulva instead of the bladder.

From St. Vincent Charity Hospital.

[1] Narath, P. A.: Personal communication to the authors.

[2] Lau, F. T., and Henline, R. B.: Ureteral Anomalies: Report of C Manifesting Three Ureters on One Side with One Ending Blindly Aplastic Kidney and Bifid Pelvis with Single Ureter on Other Side, J. M. A. **96**: 587-591 (Feb. 21) 1931.

[3] Chwalla, R.: Ureter Triplex, Ztschr. Urol. Chir. **41**: 224-225, 19

[4] Burt, J. C.; Lane, C. M., and Hamilton, J. L.: An Unusual Anom of Upper Urinary Tract, J. Urol. **46**: 235-240 (Aug.) 1941.

[5] Woodruff, S. R.: Complete Unilateral Triplication of Ureter Renal Pelvis, J. Urol. **46**: 376-379 (Sept.) 1941.

[6] Narath, P. A.: Renal Pelvis and Ureter, New York, Grune Stratton, Inc., 1951.

EMBRYOLOGY

Although there has been much divergence of opinion concerning the formation and development of the human urinary system, a final acceptance of a double but closely related origin for parenchyma and excretory apparatus has been reached and may be stated in relatively simple terms. For practical purposes the pronephros and the mesonephros may be disregarded; these exist during certain early stages in the growth of the embryo, successively performing some degree of excretory function and then degenerate upon the appearance and full development of the metanephros from which the permanent renal parenchyma are elaborated.

From the caudal segment of the primordial excretory duct (wolffian) a hollow hemispherical bulb (the ureteropelvic anlage) develops and begins to grow dorsally and then cranially. At this stage it consists of a short pedicle, the ureter, with a mushroom-shaped extremity, the future renal pelvis. Further growth is concerned with an elongation of the ureter and expansion of the pelvis with subsequent division into calices, papillary ducts, and collection tubules. Simultaneously, a parenchymatous mass is assuming form. This arises from a separate anlage, the mesochyme or renoblast. The latter accompanies the ureter in its ascent, covers the primative pelvis like a cap, and eventually produces the secretory glandular portion of the kidney. Union of the two segments results in the complete normal urinary system with kidney and ureter in their usual anatomic positions.

Numerous deviations from this characteristic behavior of the ureteric bud and the associated renoblast are possible. Ascent may be incomplete, resulting in an ectopic kidney. Horseshoe kidney is the result of failure of separation of the mesochyme of both sides. Lack of development or premature arrest of a ureteric bud will result in the absence of one kidney. The mesochyme, identified with a normally developing bud, may be deficient in greater or lesser degree and agenesis or hypoplasia then follows. There may arise two or three ureteral buds from the primary excretory duct or there may be precocious splitting of the single ureteral bud (ureter fissus).

If the extra ureter is from an accessory bud, there will be an ureteral orifice for each in the bladder. If the extra ureters are from an anlage splitting process of the ureteric bud, such a process must necessarily have occurred early and only one vesicle orifice will result.

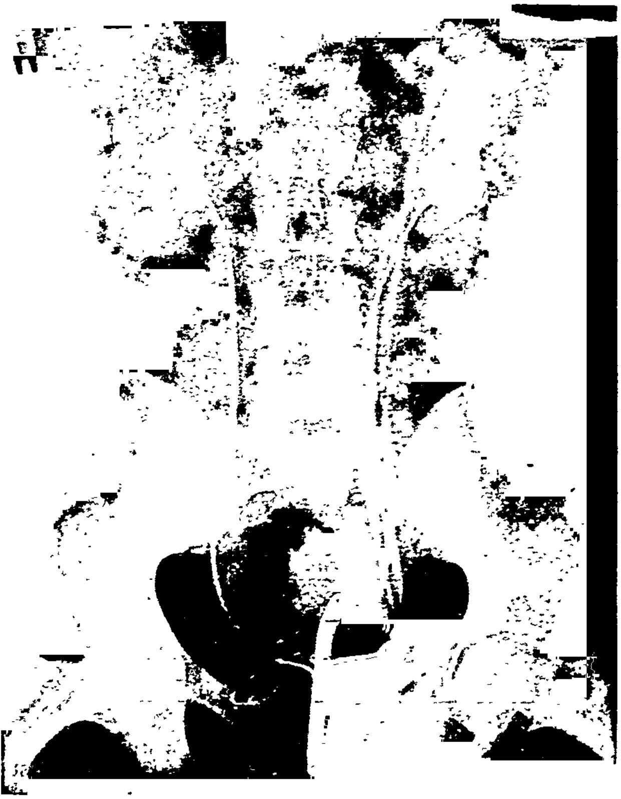
When multiple ureteral orifices exist in the bladder the following rule stated by Weigert in 1877 pertains. "The lower ureteral orifice belongs to the uppermost pelvis." The accuracy of this statement is demonstrated in both Woodruff's and our cases of triplication. Smith and Orkin [7] thought that 80% of congenital anomalies had secondary or associated pathology. Narath disagrees. He states it is illogical to pool all kinds of congenital anomalies and endeavor to thus derive a generalized percentage. Separate types must be studied and judged individually.

SIGNS, SYMPTOMS, AND TREATMENT

Patients may go through life without the knowledge that an ureteral anomaly is present unless some pathological process intervenes. Of course, pathological conditions may develop more frequently when anomalies exist. There are no signs or symptoms pathognomonic of congenital ureteral abnormality per se. The diagnosis is usually made following radiological investigation of a patient presenting symptoms of pain, frequency of urination, dysuria or hematuria, or any combination of these. The anomaly in itself requires no treatment except in event of other complicating abnormalities. One new case of true triplication of the ureter is here added to a literature containing only one other similar case.

REPORT OF A CASE

A 38-year-old married housewife entered the hospital with complaints of intermittent attacks of chills, nausea, vomiting, and mild pain in the lumbar region of the back of 10 months' duration. She had been in good health up to the time of onset when she contracted an illness diagnosed as the "flu." Subsequently she noted pain in the left lumbar region that recurred at irregular intervals, lasting for three to five days. The pain was associated with nausea, vomiting, chills, and malaise. Several weeks after the initial attack the pain subsided somewhat but not completely. Two months before admission her pain became worse, occurring every four to five days. It was described as "cramp-like" and was associated with marked sweating. The pain radiated to the lower abdomen and down the crual aspect of the leg. There was some burning on urination.



Triple left ureters.

Physical Examination.—Examination revealed an obese white female, with a temperature of 37.5 C (99.5 F), a pulse rate of 80 per minute, respirations 20, and a blood pressure of 140/88 mm. Hg. The essential physical findings were limited to the abdomen, where considerable tenderness was elicited in the costovertebral angles on both sides but more so on the left. There was tenderness along the course of the ureters anteriorly but no bladder tenderness. The urine revealed an occasional white blood cell, one to two red blood cells per high-power field, and bacteria (Micrococcus [Staphylococcus] albus). The specific gravity was 1.020, and reaction varied from acid to alkaline.

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[7] Smith, E. C., and Orkin, L. A.: A Clinical and Statistical Study of 471 Congenital Anomalies of Kidney and Ureter, J. Urol. 53:11-26 (Jan.) 1945.

Repeated smears and cultures were negative for tubercle bacilli. Intravenous pyelograms and cystoscopy with retrograde pyeloureterograms (see figure), showed (1) the left kidney to have three pelves, (2) three left ureters, (3) three left ureteric orifices in the bladder, and (4) normal right kidney and ureter.

Subsequent Course.—No treatment was indicated, and the patient had no recurrence of symptoms subsequently. It was supposed that her symptoms could have been caused by a small calculus that had passed spontaneously prior to her hospital admission.

CONCLUSIONS

Triplication of ureters, each with its own pelvis and ureteral orifice, should not be confused with "trifid" or "triplicate fused ureters." One new case of unilateral triplication of the ureter, (each with its own renal pelvis and its own ureteral orifice in the bladder), is added to a literature containing only one other authenticated case.

Hanna Building (Dr. Wright).

MENINGITIS DUE TO CANICOLA FEVER

John F. Winn, D.V.M., Montgomery, Ala.
Ruell A. Stallones, M.D., Camp Pickett, Va.
and
Benjamin D. Fremming, D.V.M., Randolph Air Force Base, Texas

Because of the interest in encephalitic diseases in California a large number of serum specimens was sent in to the Virus and Rickettsial Disease Laboratory of the California State Department of Public Health during 1950. Most of these serums were from patients suspected of having one of the viral encephalitides, but a number of other diagnoses were included. Sixty-five paired serums were tested for agglutinating antibodies against Leptospira icterohaemorrhagiae, Lept. canicola, and Lept. pomona. The clinical diagnoses of these 65 were: 14 possible cases of poliomyelitis, 4 cases of Q fever, 2 of lymphocytic choriomeningitis, 2 of possible Coxsackie disease, 1 of meningitis (cause unknown), and 42 of encephalitis (cause unknown). Three of the 65 patients had antibodies against leptospiral antigens (see table).

Summary of Positive Agglutination Tests for Leptospira on 1950 Serums from California Department of Health, Virus and Rickettsial Laboratory *

			Antibodies to Leptospira Icterohaemorrhagiae								Antibodies to Leptospira Canicola								
			Acute				Convalescent				Acute				Convalescent				
Case	Age	Sex	10	100	1,000	10,000	10	100	1,000	10,000	10	100	1,000	10,000	10	100	1,000	10,000	Clinical Diagnosis
1	35	F	—	—	—	—	+	—	—	—	++++	+++	+	—	++++	++++	++	—	Lymphocytic choriomeningit
2	27	F	—	—	—	—	—	—	—	—	—	—	—	—	+	++++	+	—	Meningitis
3	11	M	—	—	—	—	—	—	—	—	—	—	—	—	++++	++++	++++	+	Poliomyelitis

* None of the serums showed agglutination antibodies against Leptospira pomona.

MATERIALS AND METHODS

The antigen was prepared from the George William Hooper Foundation cultures originally obtained from Wolff at the Institute of Tropical Hygiene in Amsterdam. Types A and B of Wiznberg strain Lept. icterohaemorrhagiae, the Hond Utrecht IV strain of Lept. canicola, and the Australis C strain of Lept. pomona were used. The culture medium was the Schuffner modification of Vervoort's medium,[1] and the antigen was prepared from the culture directly after incubation at 32 to 34 C for five to seven days. Commercial Formalin (40% formaldehyde solution) was added in an amount equivalent to 1 ml. per 100 ml. of culture and allowed to stand for four to six hours. Serial tenfold dilutions of the serum to be tested were made with saline solution, and an equal amount of antigen was added to each tube making final dilutions of 1:10, 1:100, 1:1000, and 1:10,000 or higher if indicated. The antigen serum mixtures were incubated overnight at 37 C, removed to room temperature for two hours, and read with a hand lens. After 24 hours of room temperature the specimens were read again and the readings checked with a dark field microscope. Macroscopic readings were facilitated by the use of small conical-tipped centrifuge tubes.

REPORT OF CASES

CASE 1.—A patient became ill Jan. 7, 1950. The first serum was drawn on Jan. 13 and the second on Jan. 23. Serologic tests for lymphocytic choriomeningitis, Western equine encephalitis, and St. Louis encephalitis were negative. Both acute and convalescent serums had titers of 1:128 against mumps antigen in the complement-fixation test. The slight rise in titer against Lept. canicola antigen is considered meaningful in view of the clinical diagnosis of lymphocytic choriomeningitis.

CASE 2.—A patient became ill Feb. 22, 1950. The acute serum was drawn March 2 and the convalescent March 14. These serums were tested against lymphocytic choriomeningitis, Western equine encephalitis, St. Louis encephalitis, and mumps with negative results. The rise in titer against Lept. canicola antigen leaves little doubt that this was a case of canicola fever.

CASE 3.—A third patient became ill April 16, 1950. The first serum was drawn on April 25 and the second May 9. Tests against lymphocytic choriomeningitis, Western equine encephalitis, and St. Louis encephalitis were negative. There was a titer of 1:32 against mumps antigen in both specimens. The rise in titer against Lept. canicola antigen is significant.

The experience in these three cases is in agreement with that of MacCallum and Broom of the Virus Reference Laboratory in England.[2] In 1949 they tested the serums of 130 patients with undiagnosed meningitides, abortive poliomyelitides, and similar diagnoses and found

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From the U. S. Department of Health, Education, and Welfare, Public Health Service, Communicable Disease Center (Dr. Winn); U. S. Department of Defense, Army Medical Corps (Dr. Stallones); and U. S. Department of Defense, Air Force Veterinary Corps, School of Aviation Medicine (Dr. Fremming). Dr. Winn is currently with the Department of Health, Education, and Welfare, Communicable Disease Center, Bacteriology Section, Chamblee, Ga.

Dr. Edwin H. Lennette supplied the paired serums tested and furnished the results of the serologic tests done with viral agents at his laboratory. Dr. B. Eddie, George William Hooper Foundation for Medical Research, supplied facilities and equipment.

[1] Hull, T. G., and others: Diseases Transmitted from Animals to Man, ed. 2, Springfield, Ill., Charles C Thomas, Publisher, 1941, p. 279.

[2] MacCallum, F. O., and Broom, J. C.: Leptospiral Meningitis, Letters to the Editor, Lancet 2: 542, 1950.

with antibodies against leptospirae: 8 against Lept. ıcola, and 2 against Lept. icterohaemorrhagiae. In 0 they found two cases positive for Lept. canicola and for Lept. icterohaemorrhagiae among 67 paired ıms from similarly diagnosed cases. The rate of nearly of the serum showing a rise in titer against leptospira ı general the same as found in the 65 paired serums authors have tested.

SUMMARY

Three of 65 paired serums from individuals with clinical central nervous system disturbances of presumed in:ious origin were found to show diagnostic rises in r for the agent of canicola fever.

. O. Box 185, Chamblee, Ga. (Dr. Winn).

ANSPYLORIC MUCOSAL PROLAPSE

ord H. Hermann, M.D.

rtin C. Malensek, M.D.

aham Melamed, M.D., Milwaukee

Prolapse of gastric mucosa into the duodenum has been ontroversial subject in recent years. Although some ıbt has been cast on the clinical significance and imtance of this abnormality by some authors, the mаty of writers on the subject believe gastric mucosal lapses may produce symptoms. It is not our purpose his time to consider the subject comprehensively, but consider it of interest to relate our experience in a gle case diagnosed and cured by surgery.

REPORT OF A CASE

woman, aged 39 years, entered Evangelical Deaconess spital Sept. 30, 1952, complaining of having had occasional cks of "indigestion" for several years. On the day before iission she had experienced an attack of acute epigastric pain radiated along the right costal margin and to the interpular region. During previous attacks the epigastric pain was ally dull and accompanied by nausea and vomiting. Appetite been poor for about two years. Weight loss of about 15 :0 lb. (6.8 to 9.1 kg.) during the preceding few months was rted. The patient never noticed blood in the vomitus or ls. Appendectomy had been performed 10 years previously. .950 the patient was treated at Deaconess Hospital for discoic disease. Physical examination was essentially negative ept for slight rigidity in the upper abdomen and tenderness he midepigastrium. Admission urinalysis, complete blood cell nt, sedimentation rate, and admission chest minifilm were hin normal limits. The blood Kline test was negative. Barium l (fig. 1) and enema studies, oral cholecystography, and intraous urography disclosed no essential abnormality. The patient discharged Oct. 1, 1952, unimproved and with a diagnosis ossible cholecystitis.

n Nov. 23, 1952, the patient reentered the hospital for ilar complaints, but tarry stools had been noted one week ore admission. Tenderness was present in the epigastrium and he right upper abdomen slightly below the costal margin. masses were palpable. Routine laboratory tests were again hin normal limits. The serum amylase was 120 units. Analysis the stool disclosed no alteration of fat or starch granules tent, no undigested meat fibers, and trypsin activity positive :1,000 dilution. No fever was present.

The third admission for upper abdominal distress occurred two weeks later, on Dec. 12, 1952. A few days before admission, after consuming a large meal, the patient was suddenly stricken with epigastric fulness, nausea, and repeated vomiting. The stools had been black for a day or two. The blood pressure was 116/68 mm. Hg. Generalized abdominal tenderness was present but more marked in the epigastrium and right upper quadrant. A diagnosis of psychoneurosis was made by a medical consultant. A gynecologist was unable to find any evidence of disease in the pelvis. A repeated barium enema study on Dec. 17, 1952, disclosed no change or abnormality. The red blood cell sedimentation rate; carbon dioxide combining power; serum chloride, nonprotein nitrogen, and serum potassium levels; and basal metabolic rate were within normal limits. The hemoglobin value (12.5 gm. per 100 cc.) and red blood cell count (4,100,000 per cubic millimeter) were slightly but significantly lower than on Sept. 30, 1952. A slight secondary anemia was now present for the first time.

One month later, on Jan. 15, 1953, the patient was admitted to the hospital for the fourth time. This time a diagnosis of gallbladder disease was favored. Nausea and vomiting had continued unabated since the previous admission. Pain was present in the right upper quadrant radiating to the back. No jaundice was present. The blood pressure was 120/80 mm. Hg. The red blood cell count was 4,060,000, hemoglobin, 12.5 gm. per 100 cc., and white blood cell count, 6,800. Conservative treatment was ineffective. The patient continued to lose weight and later developed a mild secondary anemia. Exploratory surgery was performed as the only alternative to the patient for possible relief of recurrent attacks of rather severe epigastric discomfort associated with at least one episode of gross bleeding. Surgical exploration on Jan. 20, 1953, disclosed no abnormality in the gallbladder, cystic and common ducts, pancreas, liver, spleen, kidneys, or small or large intestine. Palpation of the stomach revealed a soft, plum-sized, freely movable doughy mass in the antrum. This mass could be easily swayed or pushed into the duodenum. The pylorus was dilated and thickened. The surgeon recognized the condition as redundant and prolapsing gastric mucosa. Since no other cause for this patient's symptoms could be found, the surgeon performed a subtotal gastrectomy.

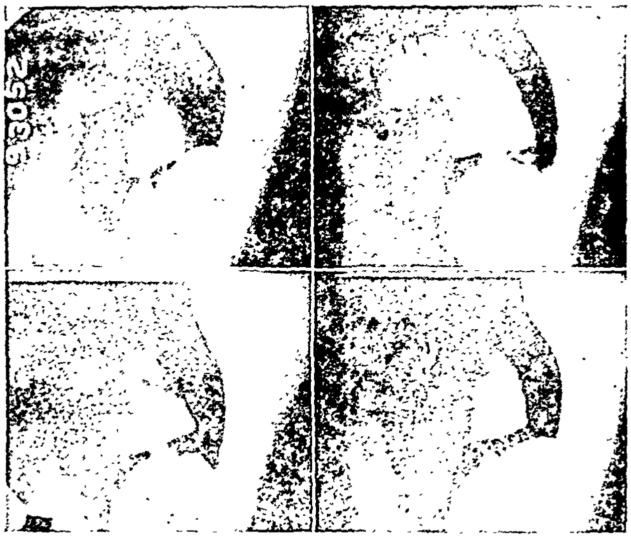

Fig. 1.—Serial barium meal studies, showing no evidence of organic disease or prolapsing gastric mucosa into duodenum. Opacified gallbladder overlies the duodenum.

The gross and microscopic pathological descriptions were as follows: "Specimen consisted of a distal stomach measuring approximately 14 cm. along the greater curvature. This has been severed just distal to the pylorus. The lumen here appears somewhat dilated but is occupied by a prolapsing mass of gastric mucosa that extends for approximately 1 cm. into the duodenum beyond the pyloric sphincter (fixed specimen). This specimen was opened along the greater curvature. This demonstrated longitudinal rugal folds in the prepyloric portion and again the prolapsing mucosal folds [fig. 2, *A* and *B*].

From the departments of surgery and radiology, Evangelical Deaconess pital.

"Sections disclose moderate hypertrophy of the pyloric sphincter and intact gastric mucosa proximal to this point. In one of the sections is very marked edema of the submucosa in the area of the pylorus and an almost polypoid elongation of the mucosa that appears to extend into the duodenum. There is no significant degree of inflammation either in the gastric or duodenal wall and there is no evidence of ulceration.

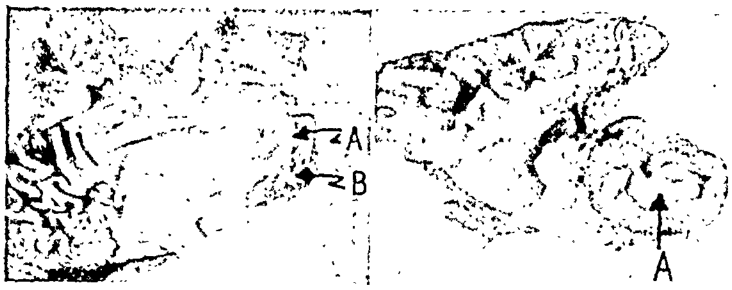

Fig. 2.—Fixed surgical specimen. *A*, redundant and prolapsing prepyloric mucosa. *B*, pyloroduodenal junction.

"Pathological diagnosis: Redundant gastric mucosa and prolapse into the duodenum."

The patient made an uneventful recovery and was discharged about 13 days after surgery. She has remained well and relieved since surgery over 30 months ago. She has gained over 10 lb. (4.5 kg.).

SUMMARY AND CONCLUSION

In a case of symptomatic transpyloric mucosal prolapse diagnosed and successfully treated by surgery, symptoms that were present for several years were relieved by subtotal gastrectomy. This case report illustrates the fact that prolapsing gastric mucosa is not always demonstrable roentgenographically. Many cases of prolapsing mucosa escape detection when the redundant membrane recedes. Such condition should always be kept in mind in all patients complaining of upper abdominal discomfort and bleeding from the gastrointestinal tract. Roentgen studies should be repeated if symptoms persist.

1821 W. Wisconsin Ave. (3) (Dr. Melamed).

COUNCIL ON PHARMACY AND CHEMISTRY

By authority of the Board of Trustees of the American Medical Association, the Council has terminated the seal-acceptance program in favor of a new program designed to render a better service to the medical profession. The following statement adopted by the Council is issued to explain the purpose, guiding principles, and operation of the new program.

R. T. Stormont, M.D., *Secretary.*

NEW PROGRAM OF OPERATION FOR EVALUATION OF DRUGS

The rate at which new drugs are being developed and marketed is increasing constantly. Often these new agents are extremely valuable additions to our therapeutic armamentarium; however, many of them are also capable of doing more harm than good if prescribed or administered in an indiscriminate fashion without full appreciation of their possible harmful effects or observance of necessary precautionary measures. A calculated risk is involved in the use of drugs that h pharmacological effects of any real significance. Th peutic agents that have a relatively narrow margi safety or a high index of serious side-effects should necessarily be condemned and discarded complet The proper use of such drugs often will save lif provide beneficial effects not obtainable with any o means of therapy. The physician has the serious sponsibility of weighing the possible harmful effects a drug against the apparent need for it in the indivi patient. Obviously, an appreciation of the valid indi tions for use as well as the known properties of a new drug is necessary in order to serve the best terests of the patient.

Many pharmaceutical firms recognize their respo bility to the medical profession and endeavor to prov such information in brochures and other literature a necessary for relatively safe and proper usage of th new drugs. Promotional literature, however, that co tains unwarranted indications for use and minimizes neglects the mention of contraindications, possible se ous side-effects, and necessary precautionary measure does not encourage the practice of rational therapeuti

There is an increasing demand from the medical pr fession in general for concise and timely reports t contain an authoritative, unbiased evaluation of n therapeutic agents. The former acceptance program the Council served a useful purpose in this regard many years; however, in this present era of rapid n developments in therapeutics, the work involved in pro essing for acceptance many different brands of a dr became cumbersome and time-consuming to the exte that physicians could no longer be provided with t type of service they desired. Consequently, termin tion of the seal-acceptance program became necess in order that the Council could embark on an expand program of operation that would be of much more i terest and value to the profession.

Under the new program drugs will be evaluated at t earliest possible opportunity in order to serve the b interests of the profession. As a rule the greatest inter in a new drug occurs at about the time it is introduced the market for general use. This is also the time wh there is the most need for an unbiased report contain information that will aid physicians in the judicious proper use of such medication. Evidence relating to new use or significant change in the status of a drug s also be evaluated and reported on as the occasion mands.

Pharmaceutical firms are encouraged to cooper with the Council by forwarding complete data or ports (published and unpublished) of all laboratory clinical investigations relating to the safety and usef ness of new drugs in order that evaluation reports may made to the profession at the earliest possible date. C operation with the Council in the selection of suita nonproprietary names for new drugs before such age are ready to be placed on the market is also encourag

The former official rules of the Council have be superseded entirely by the following description of t new program of operation.

GENERAL PURPOSE

he function of the Council on Pharmacy and Chem- is to examine and evaluate available evidence re- ig to the actions, uses, dosage, hazards, and other inent properties of drugs and to encourage rational apy by timely, informative reports to the medical ession.

pecial committees appointed by the Council also with particular matters such as research projects the toxicologic aspects of pesticides and household nicals.

NCIPLES GOVERNING THE EVALUATION OF DRUGS INCLUSION IN NEW AND NONOFFICIAL REMEDIES

he Council evaluates evidence pertaining to the ty and usefulness of medicinal agents offered or in- led for use in or on the human body for the diag- is, prevention, or treatment of disease. Reports of ie evaluations are published for the information of medical profession.

he Council considers for evaluation drugs with a le active ingredient or extracts from a single source. nbinations or mixtures containing two or more active edients may receive consideration only if it is deemed rable to present the Council's views regarding any i preparation for the information of the medical pro- ion.

n evaluating drugs the Council considers scientific ical and laboratory evidence (published or unpub- ed) submitted by manufacturers and such other re- ts as may be available. The Council also endeavors btain the opinions and advice of other experts who e in a consultant capacity. The Council does not lertake to conduct clinical and laboratory tests or eriments in evaluating drugs.

he Council may from time to time reevaluate a drug evaluate evidence relating to a new use or route of ninistration for a drug.

he views of the Council with respect to the actions, s, dosage, contraindications, hazards, limitations, and er pertinent characteristics of each evaluated drug are mitted in the form of a monograph to the Editor of E Journal of the American Medical Association for lication in the Council column. These monographs subsequently included in the Council's annual publi- on, New and Nonofficial Remedies.

f the Council's reevaluation of a drug reveals a sig- cant change in its status, such information is sub- ted to the Editor of The Journal for publication l subsequently incorporated in New and Nonofficial medies.

he Council encourages the early adoption and use of ionproprietary name for general use in prescribing, ning, and identifying each drug. The Council be- es that such names tend to diminish confusion and in the interest of the patient and physician. Each g evaluated is described by a nonproprietary name.

When the Council has knowledge that a drug is no ger available commercially or when it has been in- ded in the United States Pharmacopeia, National mulary, or New and Nonofficial Remedies for 20 rs, the monograph may be deleted from New and nofficial Remedies.

The Council does not accept, endorse, recommend, or guarantee any individual brand or preparation of a drug described in New and Nonofficial Remedies. The Council does not undertake to test or analyze samples or to review or investigate manufacturing and control procedures. The Council does not purport to ascertain whether or not any firm has complied with federal, state, or municipal laws and regulations.

SPECIFIC PROCEDURE

1. All pharmacological and clinical evidence or data in the form of published and unpublished reports on a new drug that are made available to the Council office will be referred to a number of recognized experts who will be asked to serve in a consultant capacity.

2. The views of the consultants regarding the adequacy of the evidence for the claimed uses of the new drug, as well as comments regarding such information as the limitations, contraindications, hazards, and dosage will then be transmitted to a member of the Council who will serve as a referee.

3. The referee will consider all the available evidence, as well as the views and comments of the consultants, and will make an evaluation recommendation.

4. A member of the Council staff will prepare a proposed report or monograph on the new drug based upon the referee's evaluation and recommendation.

5. The proposed monograph, the referee's recommendation, the views and comments of the various consultants, and reprints or photostats of all the available evidence will be transmitted to all the members of the Council for consideration.

6. The proposed monograph will be revised in accordance with the comments and criticisms of the members until it is satisfactory to the Council as a whole and adopted for publication in The Journal.

7. A copy of the proposed monograph will then be sent to the pharmaceutical firm or firms that supplied the evidence and data on which the Council's evaluation was based in order that they will have an opportunity for comment or criticism.

8. If there is no criticism of the proposed monograph, it will be sent to the Editor of The Journal for publication in the Council column. Any criticisms offered by the firm will receive due consideration before the proposed monograph is sent to the Editor for publication. When the monograph is published, credit will be given the firm or firms supplying the evidence or data on which the Council's evaluation of the drug is based.

9. Provision will be made for frequent publication of supplementary Council statements or reports on each new drug as evidence accumulates to justify recognition of additional valid claims for use, dosage changes, hazards, and contraindications. The same procedure for evaluation will be followed in these instances as with the initial consideration of a new drug.

10. Necessary changes or revisions based upon these supplementary statements or reports will be made in New and Nonofficial Remedies at the end of each year.

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WORLD MEDICINE

Elsewhere in this issue of THE JOURNAL are a paper entitled "The Physician and World Medicine" (page 1147) and a letter to the Editor on a recent World Health Organization Assembly (page 1198). These communications indicate the growing interest in and importance of the value of considering medical problems on a world-wide basis. Each country, of course, has its own problems, but there are many aspects of the control of disease and the providing of medical care that should be viewed internationally. Sometimes the view prevailing in one country is helpful when disseminated elsewhere, and when the medical data are gathered they can be translated into terms of lessening of suffering, saving of lives, saving of money, and increasing production of goods. Such value is readily apparent to everyone.

Not so apparent at times, however, is the protection a country receives when its health professions can benefit from mistakes made elsewhere. For example, free exchange of information can not only show a country how to control, say, malaria but it can also point to the inequities of some governmentally inspired schemes that may not bring health, happiness, and freedom but instead shackles and misery. It is difficult to compare countries in different parts of the world and on the basis of such comparison devise a common plan for each compared area, and it is difficult at times to point to the weaknesses in each area. Every country has its own health and financial problems, its own social viewpoint, and its own political background. Nevertheless, there are certain fundamental principles applicable to all civilized countries. Included are those related to health, its supply and its utilization. Fundamental are freedom in the choice of a doctor by the patient and freedom in the use of modern scientific advances by the doctor. Equally fundamental is relegation of the role of government to one of assistance when necessary and not of domination or control where no need except political expediency has been demonstrated.

The World Health Organization is supported by the governments of many countries, and it has done much to provide assistance in the health field, especially in some underdeveloped areas. Its influence has been felt in widely scattered places and will be lasting in many respects. Often confused with it is the World Medical Association, which does not consist of representati
of governments but of national medical associatio
Associations from 50 countries are now members
the World Medical Association. It works closely w
the World Health Organization and with other int
national bodies interested in health. Its role in repo
ing on the activities of the International Labor Organi
tion and the International Social Security Associati
has been mentioned on previous occasions in the pa
of THE JOURNAL. To the World Medical Associati
the medical profession owes a debt of gratitude for
continual watchfulness over matters of much inte
to doctors and their patients. An excellent opportu
for doctors to see the World Medical Association in
tion will be afforded in Vienna, Austria, September
26, when the ninth General Assembly will be held.
the same time doctors and their families will be abl
visit places that have been so familiar to so many.
information consult the office of the World Medical
sociation, 345 E. 46th St., New York 17, Dr. Loui
Bauer, Secretary General. The trip will be well wo
while, but plans should be confirmed promptly.

NEW COUNCIL PROGRAMS

After months of study by the councils concerned
the Board of Trustees, a revision of the programs o
scientific councils of the Association was announce
THE JOURNAL in February (*J. A. M. A.* **157**:664 [
19] 1955). For many years these councils have prov
leadership in the evaluation of products used by
sicians and, to a lesser extent, by the public. In
evaluation programs, council seals were awarde
manufacturers and distributors of drugs, foods, dev
and cosmetics that met acceptance requirements
some instances the prominence given to the sea
acceptance program made it appear to dominate
work of the councils in the collecting, analyzing,
disseminating of medical information. Additionally,
evaluation of a multitude of individual brands, ra
than classes of products, became so time-consuming
it threatened to interfere with the broader aspects o
council programs.

For these reasons new and more effective prog
are being adopted by the scientific councils—prog
that do not require the inspection of individual prod
or the issuance of seals. The seals of the councils
the advertising emblems of THE JOURNAL and *Tod*
Health will no longer appear in Association publicati
Firms and individuals to whom the seals have
issued in the past have been notified of the new prog
and requested to eliminate the seals from collateral
vertising and promotional material by August 15, 1

There is published elsewhere in this issue of
JOURNAL (see page 1170) an announcement of the
program of the Council on Pharmacy and Chemis
Similar announcements by the Council on Foods
Nutrition, the Council on Rehabilitation, and the C
mittee on Cosmetics will follow shortly. It is our be
that the new programs will be of greater value to

fession' and the public. Released from the detail of ividual brand evaluation, the scientific councils are w free to carry out their broad objectives by methods re suited to the current needs of the profession.

Also published elsewhere in THE JOURNAL (see page 75) are the Principles of Advertising for the Publica- ns of the American Medical Association. These prin- les are essentially the same, in spirit, as those by ich products have been accepted for advertising in M. A. periodicals for many years. Thus all readers n be assured that discontinuance of the so-called seal ogram will not mean a lowering of advertising stand- ls. The special knowledge of the councils, and of other pert bodies if indicated, will be used for guidance, and product will be accepted for advertising unless the les are met.

OCTOR-DRAFT" LAW EXTENDED ROUGH PARLIAMENTARY ANEUVER

On June 28, 1955, the Congress again extended for other two years, with only slight amendment, the pro- ion of the "Doctor-Draft" law. Congress reenacted is discriminatory law after one of its staunch sup- rters was forced to confess on the floor of the House at "it cannot be supported by reason and logic." How l this occur? So that every physician may see for him- lf, there is reproduced (except for minor parliamentary aneuvers) in this issue of THE JOURNAL (see page 03), the section of the daily Congressional Record of ne 28, 1955, reporting the House action.

No responsible source on either side of this question s ever suggested that anything less than the highest ndard of medical care be provided for the armed rces. In addition, most persons would agree that there e two methods of obtaining an adequate number of operly qualified physicians to provide this care. Older ysicians can be forced into uniform by means of a dis- iminatory peace-time draft, or career military service n be made attractive enough to obtain and retain phy- ian volunteers of the caliber desired. It is in the thod, and not the end, that the American Medical As- ciation differs from the Department of Defense. The sociation insists that the doctor draft is so drastic a easure that it can be justified only when all other rea- nable means have failed. The armed forces and the ngress, on the other hand, are unwilling to relinquish ch an easy source of medical manpower and have iled to make a generally acceptable effort to provide equate incentives for career service. Nor has a satisfac- ry effort been made to utilize to the fullest the services civilian physicians in positions not requiring military atus. These are the simple facts behind the disputed ex- nsion of the doctor draft for another two years.

The supporters of a continued draft of older physi- ans take the view that the regular draft could not fur- sh a sufficient number of physicians under 35 years of e to staff the armed forces and the Public Health Service, a civilian agency. To arrive at this conclusion it is necessary to use a high estimate of requirements, a low estimate of availability, and a plan for deferring some 1,800 young physicians for at least two years, and to abandon all hope for decreasing the rate at which medical officers are leaving the military services. Further, supporters of the physician draft argue that younger physicians are not sufficiently experienced to provide a high standard of medical care; hence older and more experienced physicians must be drafted. Assuming this is a fact, the possibility of attracting experienced medical officers has been almost completely ignored. To proponents of the draft, it is either forced service or chaos. It will also be illuminating to those physicians who have served in the armed forces to learn that, according to Chairman Vinson of the House Armed Services Committee, if all medical care of dependents in the United States, and all medical care of civilian employees and veterans both in the United States and elsewhere were abolished, it would save the services of only 621 physicians!

It should be noted that the Senate coupled the doctor-draft extension to the regular Selective Service extension that had previously passed the House. Since this was an amendment to the bill, conferees were appointed by the Speaker of the House to meet with a similar group from the Senate and agree on a bill that both houses could adopt. It was the report of these conferees that was before the House. Thus different items of legislation were firmly coupled together and had to be accepted or rejected without amendment. In this parliamentary situation it was necessary, in order to get full consideration of the doctor-draft extension, to recommit the bill to conference, with instructions to strike out the doctor-draft extension. In this way it could have been brought to the floor of the House separately, in an orderly fashion, for debate and amendment on its own merits. Speaker Rayburn refused to permit such a motion to be made, so the critical vote was taken on the less desirable motion to *simply recommit* the whole measure to conference. In spite of this situation, 171 members of the House voted "Yea" on the motion to recommit (roll no. 99). These, in effect, were votes against the doctor-draft extension in its present form. On the other hand 221 congressmen voted against the motion to recommit. The bill was then speedily enacted by both Houses and signed by the President.

And so the authority to draft older physicians is extended for another two years. This is only an authorization, however, and it need not be used if the Department of Defense will make reasonable efforts to correct the basic problem. Plans should be made immediately to attract and retain experienced physicians on a voluntary basis. Medical care programs should be reviewed critically to remove obstacles to full use of civilian physicians in positions in which a uniform is not essential. The problem can be solved, but it will not solve itself. It will require an honest desire to place military medicine on a sound basis. Solution of the problem is not as easy as continued reliance on a discriminatory draft of older physicians.

THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

During the meeting of the American Medical Association at Atlantic City I was amazed by the number of questions asked by physicians about the workings of the parent body. It would seem from this that much educational work still needs to be done among members of the Association and that some of the material previously covered should be repeated. The question most often asked of me was, "Can anyone attend the meetings of the House of Delegates and can anyone discuss the problems presented there?" Meetings of the A. M. A. House of Delegates are open to all comers, either professionals or individuals outside of medicine. The press is always welcome to our House sessions, a fact that is confounding to our critics and sometimes stops them in their tracks. The only time this "open door" policy goes out of operation is on the extremely rare occasions when the House calls for an executive session. At those times no one is allowed to be present except the duly elected members of the House. In all the years that I served as a delegate, the executive session was seldom invoked.

Discussions on resolutions or other matters before the House are generally limited to the delegates and ex-presidents of the Association. Others who wish to speak before the House must request permission, which can be granted only by a unanimous vote; however, only delegates have the right to vote. Resolutions before the House are generally passed on by voice vote. In most instances a simple majority is all that is required to carry a measure. When the voice vote is close, the Speaker calls for a standing vote or a written ballot. The written ballot is used in cases where a proposal has generated considerable heat and extraordinary measures for accuracy in counting are demanded. It is also used when a secret ballot is desired by the House.

What other privileges are accorded a physician who is not a member of the House of Delegates? He may listen to issues debated on the floor of the House. If he has an active interest in a particular issue he can appear before the reference committee to which the matter has been assigned for hearings. Any physician member of the A. M. A. can, upon recognition, speak up at a reference committee meeting. Other guests can speak only when called upon by the committee. These meetings also are open to the press. After hearing all those who have anything to say on a given issue, whether they are members of the House or not, the reference committee goes into executive session to discuss the testimony that has been recorded by its secretary and a report is prepared for presentation to the House.

Usually the work of the House seems cut and dried because it often accepts the unanimous report of the reference committee without question; however, the House, if it wishes to, can challenge the reference committee's report. It has on many occasions mod
even reversed the recommendations of a commit
times the members of a reference committee m
a majority report and a minority report. Then
bating may become heated. The House by major
may accept either of the two reports or mak
modifications. This happened on the osteopath
at the Atlantic City session just a few weeks
many of you will remember.

So you see, any member of the A. M. A. is
to attend meetings of the House of Delegates an
voice in the proceedings. All he has to do is
reading of the resolutions, note to which commit
Speaker of the House refers them, and speak u
issues at the reference committee hearings. No
can come before the House except through the
of the officers or Board of Trustees or by res
presented by some standing comn
the House, a member of the H
an elected officer of the Ass
Where do these resolutions o
Most come from the component
cieties after going through the p
have just outlined. Others may co
individual members of the House.
meetings resolutions are presented
resentatives of the county societ
are elected to the house of delegat
state organizations. The resolutio
sented there are also sent to r
committees where the individual
may appear to protest, agree, or o
gestions for modification. A major
in a state house may kill a resol
that level or cause it to be forwarded to the A.
House. If you favor a resolution that has been
at the state level, you still may be able to have
ject considered by the national organization by
another state delegation to present it.

I have gone into detail to explain the working
House of Delegates because so many of our
think that everything is cut and dried by the B
Trustees and that the will of the physicians of
is not considered. Nothing could be farther f
truth. I think this bears repeating again: you
come to sit in at all sessions of the House excep
tive sessions, which occur very rarely. You can
before any reference committee, whether or not
an elected member of the House. If you want
can have your say. Why not take a more active
the affairs of your Association? We need your
and your presence at meetings—not only on the
level but at your state and county sessions as well
all, *you* are the A. M. A. If you do not take a
the job we all must do, then you have only you
blame for any inadequacies.

ELMER HESS, M.D., Erie

ORGANIZATION SECTION

NCIPLES OF ADVERTISING FOR AMERICAN DICAL ASSOCIATION PUBLICATIONS

ll advertising contracts and advertising copy are subject to Principles of Advertising for American Medical Association lications. The Association reserves the right to accept or t advertising copy for any reason.

he following general rules are applicable to all advertising :

The advertiser may be required to submit data in support e usefulness of the product and the validity of the proffered ns.

Advertisements should not be deceptive or misleading.

Sweeping superlatives and unfair comparisons will not be wed. Extravagantly worded copy is subject to revision or ction.

Disparagement of a competitor's goods will not be allowed. claims for superiority must be supported by evidence accept- to the Association.

Quotations or excerpts from a published paper are accept- only if they do not distort the meaning intended by the ior. Furthermore, the mere appearance of a paper, or of ral papers, may not necessarily supply sufficient evidence to ort the proffered product or claim, and the Association in instances may request more complete data. When excerpts aken from a published paper for use in an advertisement the ciation may require the advertiser or his agent to obtain ten permission for such use from the author and if necessary, the editor or publisher of the publication in which it ars.

If testimonials or quotations appear in advertising, the lity of the claims, the expert knowledge of the person offer- the testimonial, and the probable effect of the advertisement he reader will be considered. The Association may request ence of the authenticity of the testimonial.

The Association will not accept advertisements which in judgement of the Association: (*a*) appear to violate the Prin- es of Medical Ethics; (*b*) are indecent or offensive in either or illustration; (*c*) contain attacks of a personal, racial, or ious character or appear to be contrary to the regulations laws for the prevention of discrimination; (*d*) contain claims d by any court or federal or state agency to be invalid or in ation of law.

Advertisements proposed for *Today's Health* can make rence to certain minor symptoms but not to any disease. ther words, such advertisements cannot suggest treatment disease—only temporary relief from a symptom.

The advertiser and the agency agree to protect and indem- the Association against any and all liability, loss, or expense ng from claims for libel, unfair competition, unfair trade tice, infringement of trade-marks, trade names, or patents, ations of rights of privacy and infringement of copyrights, prietary rights, and any other claims resulting from the pub- tion of advertisements by the Association.

0. The Association reserves the right to change without ce the foregoing principles.

uestions concerning advertising copy should be directed to Advertising Department of the American Medical Associa- , 535 N. Dearborn, Chicago 10.

W SERIES ON SEX EDUCATION

he Joint Committee on Health Problems in Education of the ional Education Association and the American Medical ociation have prepared the following new pamphlets on sex cation: "Learning About Love," which is for young people oth sexes about 16 to 20 years of age; and "Facts Aren't ugh," a pamphlet for adults who have any responsibility for dren that may create a need for an understanding of sex cation. These pamphlets are distributed by the two previously ed associations.

MEDICAL BOOKS FOR OVERSEAS

The U. S. Information Services in many countries have indicated a great need for books and journals in the field of medicine for libraries of medical schools and associations. Back files of medical journals and books could be usefully distributed overseas if mailed to: The U. S. Book Exchange, 1816 Half St., S. W., Washington, D. C.

The following posts have requested medical journals:

Rio de Janeiro, Brazil: The Journal of the American Medical Association.

Santiago, Chile: Technical magazines on medicine and nursing.

Ecuador: Technical periodicals in fields of medicine and dentistry.

Guatemala: Magazines on medicine.

Managua, Nicaragua: Complete set of The Journal of the American Medical Association for 1953. Sets of other medical and public health publications.

Lima, Peru: Regular shipments of periodicals of technical, professional, and scientific nature.

Vienna, Austria: Technical journals.

Berlin, Germany: Professional journals in fields of social welfare and public health.

Madrid, Spain: Regular shipments of medical periodicals.

Alexandria, Egypt: Medical journals (*American Journal of Surgery, Annals of Surgery, American Journal of Nursing, Journal of Dental Research*, etc.) 25 copies per month.

Athens, Greece: Technical and professional journals.

Bangalore, India: *Medical Clinics of North America*, The Journal of the American Medical Association.

Bombay and Hyderabad, India: Journals on health.

Teheran, Iran: Can use many copies of magazines in field of science and medicine.

Damascus, Syria: Technical and scientific journals most useful, especially public health, tuberculosis.

Taipeh, Formosa: Medical journals.

Surabaja, Indonesia: Regular shipments medical magazines for six organizations.

Beirut, Lebanon: The Journal of the American Medical Association and *Surgical, Gynecology and Obstetrics* for Governmental Hospital, Baabda. All kinds of medical journals for French Faculty of Medicine.

Buenos Aires, Argentina: Publications on cancer for Rosario Institute of Cancer.

Tegucigalpa, Honduras: Collections of medical and dental books for libraries of schools of medicine and dentistry of the National University.

THIRD STANDARD NOMENCLATURE INSTITUTE

The third series of three day classes covering the practical applications of the Standard Nomenclature of Diseases and Operations in the hospital or medical clinic will be conducted Oct. 10-12 at A. M. A. headquarters, Chicago. Included in the short course will be lectures on the theory, basic principles, and installation of the Nomenclature relating to the topographic section. Practice in coding also will be offered. Lectures on theory will be given by Adaline C. Hayden, C.R.L., associate editor of Standard Nomenclature, A. M. A., and on anatomy by Edward T. Thompson, M.D., chief of programs operations, hospital facilities, U. S. Public Health Service, Washington, D. C. Classes will be restricted to the first 100 registrants. Applications should be sent immediately to Mrs. Hayden at A. M. A. headquarters.

MEDICAL NEWS

ALABAMA

State Medical Election.—The Medical Association of the State of Alabama recently elected Dr. Frank Chenault, Decatur, president; Dr. Grady Oscar Segrest, Mobile, president-elect; Dr. S. W. Windham, Dothan, vice-president; Dr. Douglas L. Cannon, Montgomery, secretary-treasurer.

CALIFORNIA

Directory of Psychiatrists.—The Southern California Psychiatric Society is publishing a directory of psychiatrists in Southern California. Any psychiatrist in the area who has not received an information sheet is urged to request it immediately from Dr. Jerome M. Kummer, Associate Editor, Box 305, Santa Monica.

Festschrift for Dr. Bloomfield.—The May issue of the *Stanford Medical Bulletin* is a *festschrift*, dedicated to Dr. Arthur L. Bloomfield, San Francisco, emeritus professor of medicine, Stanford University School of Medicine, by more than 150 former students and colleagues. Dr. Bloomfield, who, after 26 years of teaching at Stanford, retired in 1954 as head of the department of medicine, is a former president of the California Academy of Medicine and the American Society for Clinical Investigation. During World War II he also served on the committee on medicine of the National Research Council.

Personal.—Dr. Arthur E. Smith, Los Angeles, was recently awarded an honorary doctor of science degree by Arizona State College, Tempe.——Dr. Carroll J. Bellis, Long Beach, has been declared the winner of the 1955 Mississippi Valley Medical Society essay contest for his paper, "The Management of Acute Bowel Obstruction," which he will present at the annual meeting of that society in St. Louis, Sept. 28-30.——Dr. Edward P. Luongo, Los Angeles, has been appointed associate clinical professor of medicine (industrial) at the University of California Medical School at Los Angeles. Dr. Luongo, recently elected Chairman of the Section of Preventive and Industrial Medicine and Public Health of the American Medical Association, is a director of the Industrial Medical Association.

KANSAS

Drive on Tuberculosis.—Dr. Joseph B. Stocklen, controller of tuberculosis for Cuyahoga County, was appointed by Governor Fred Hall to direct a study program in an all-out effort to eliminate tuberculosis in Kansas. Working with him will be Dr. Ralph I. Canuteson of Lawrence, director of student health service of the University of Kansas, Lawrence-Kansas City, and president of the Kansas Tuberculosis Association; Dr. George Jackson, director of institutions for the state board of social welfare; Dr. Thomas R. Hood, executive secretary of the state board of health; and Mr. W. W. Wilmore, executive secretary of the Kansas Tuberculosis Association.

University News.—Dr. Hugh L. Dwyer, clinical professor of pediatrics and of preventive medicine, and Dr. LaVerne B. Spake, clinical professor of otorhinolaryngology and chairman of the hearing and speech department, Kansas University Medical Center, Kansas City, became clinical professors emeritus July 1 in accord with the university age rule. Dr. G. O'Neil Proud, professor and chairman of the ear, nose, and throat department, has assumed chairmanship of the hearing and speech department.——Dr. Lawrence Peters joined the University of Kansas School of Medicine faculty July 1 as professor and chairman of the department of pharmacology, leaving a similar position he had held in the Tulane University of Louisiana School of Medicine, New Orleans, since 1953.

MAINE

Personal.—Dr. Lester Adams, Hebron, who has retired after 32 years as superintendent of the Western Maine Sanatorium, was honored by the townspeople of Hebron and West Minot and several hundred former patients at an open house and reception at the sanatorium. Dr. and Mrs. Adams expect to make their home in Thomaston.

New England Health Institute.—A program on the aspects of health services, entitled "Lighthouses in a Changing World," sponsored by the New England Health Institute, will be held at Colby College, Waterville, from Aug. 30 to Sept. 1. Among the topics will be local health services, changing patterns in family life, human relations in public health, teamwork in rehabilitation, tuberculosis control, accident prevention, juvenile delinquency, prevention and rehabilitation as applied to housing, prevention in dentistry, and prevention of radioactive contamination of water and aquatic life. Among the speakers will be Governor Edmund S. Muskie of Maine; Dr. Albert L. Chapman, Washington, D. C., regional medical director, U. S. Department of Health; Dr. Herman E. Hilleboe, Albany, N. Y., commissioner, New York State Department of Health; and Dr. O. Spurgeon English, head, department of psychiatry, Temple University School of Medicine, Philadelphia.

MARYLAND

Dr. Riley to Resign.—Dr. Robert H. Riley, Baltimore, chairman of the state board of health for 27 years and a member of the department since 1914, has announced his intention to resign on Jan. 1, 1956. Dr. Riley will be 76 in August, but under a law enacted by the Maryland General Assembly he was entitled to life tenure of office. It was under the Riley administration that Maryland became the first state in the nation to have full-time health services, including trained health officers, in every county.

MASSACHUSETTS

State Medical Election.—Newly elected officers of the Massachusetts Medical Society include: Dr. Conrad Wesselhoeft, Boston, president; Dr. Harold R. Kurth, Lawrence, president-elect; Dr. William A. R. Chapin, Springfield, vice-president; Dr. Robert W. Buck, Waban, secretary; Dr. Eliot Hubbard Jr., Cambridge, treasurer; and Dr. Norman A. Welch, West Roxbury, assistant treasurer.

Rehabilitation Facility for Paraplegia Patients.—Plans for an industrial rehabilitation department and neurosurgical service for the treatment of paraplegic patients have been announced by the Liberty Mutual Insurance Company and the Haynes Memorial department of the Massachusetts Memorial Hospitals, Boston, in cooperation with the Boston University School of Medicine. The new service will provide a modern rehabilitation facility for the over-all care and treatment of neurosurgical patients. To house the new department, Liberty Mutual will rebuild and reequip the east wing of Haynes Memorial Hospital to provide a unit with beds and all facilities for 26 paraplegia patients, including ambulation and exercise rooms. Dr. Donald Munro, the present chief of neurosurgical services, Boston City Hospital, who has been a consultant to Liberty Mutual since 1949, will be head of the new department.

Personal.—Dr. James Mann, director of clinical psychiatry and of research at the Boston State Hospital, has been granted a year's leave of absence beginning Sept. 1, to serve as acting director of the department of psychiatry at the Hebrew University-Hadassah Medical School in Jerusalem. Dr. Mann succeeds Dr. Milton Rosenbaum of the University of Cincinnati College of Medicine, who has been acting director of the medical school in Jerusalem for the past year. Dr. Mann plans to return to his post of clinical director at the Boston State Hospital after his

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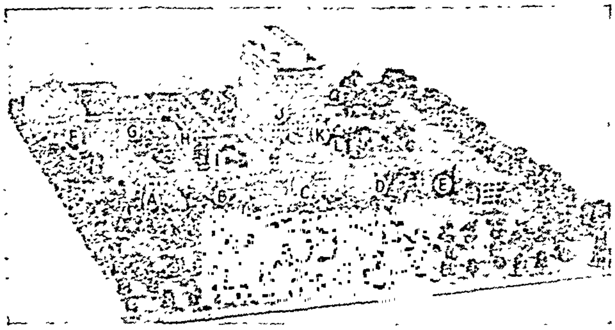
Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

year abroad.——Dr. Hugo Wolfgang Moser, Watertown, has been appointed the first research fellow of the National Multiple Sclerosis Society. The appointment supplements the national society's program of research grants, which are awarded to investigators working on specific projects.——Dr. Wyland F. Leadbetter, chief of urology at Mount Auburn Hospital, Cambridge, has been appointed associate clinical professor of surgery at Harvard Medical School and chief of the urologic service at the Massachusetts General Hospital, Boston. Dr. Leadbetter, formerly professor of urology at Tufts College Medical School, served as assistant in genitourinary surgery at the Harvard Medical School from 1946 to 1952.——The joint appointment of Dr. Howard Ulfelder, Winchester, as chief of staff of the Vincent Memorial Hospital, chief of the gynecologic service, Massachusetts General Hospital, and clinical professor of gynecology, Harvard Medical School, Boston, was recently announced.

MICHIGAN

Society News.—The Upper Peninsula Radiological Society was recently formed, and the following officers were elected: Dr. L. Grant Glickman, Menominee, president; Dr. T. Boyd Bolitho, Marquette, vice-president; and Dr. Arthur J. Gonty, Menominee, secretary. Quarterly meetings will be held.

Addition to Ford Hospital.—The 17-story building, recently added to the Henry Ford Hospital in Detroit, is designed for outpatient care and has operating rooms, staff conference rooms, an x-ray department, and laboratories. A teleradiation therapy machine to hold a cobalt bomb has been installed in a third floor room, with lead walls backed with concrete. The entire third floor is devoted to radiology, the second floor to diagnostic clinics, and the fourth floor to operating rooms. The 9 million dollar clinic building is designed to handle 4,000 outpatients a day. The hospital, which was opened on Oct. 1, 1915, with accommodations for 49 patients, now has facilities for about 700 bed patients. Associated with the hospital is the Henry Ford Hospital School of Nursing.



Henry Ford Hospital. *A*, inpatient rooms (basement being used for gastrointestinal outpatient clinic and delivery); *B*, outpatient clinic (to become inpatient rooms); *C*, administrative and outpatient clinics (part will become inpatient rooms); *D* and *E*, inpatient rooms; *F*, Clara Bryant Ford Nurses Home for student nurses of the Henry Ford Hospital School of Nursing; *G*, education building for student nurses (contains classrooms, auditorium, swimming pool, and other recreational facilities); *H*, not yet constructed; *I*, auditorium; *J*, clinic building; *K*, garage; *L*, original building of hospital (contains inpatient rooms, operating rooms, and emergency room).

MINNESOTA

Dinner for Dr. Dredge.—Dr. Homer P. Dredge was recently honored at a dinner in the state hospital in Sandstone, given under the sponsorship of the Hartley M. Robey American Legion Post. Funds contributed by Dr. Dredge's friends will be used to furnish the waiting room in the Pine County Memorial Hospital, now being erected at Sandstone, which Dr. Dredge was instrumental in promoting. Dr. Dredge has served Sandstone as health officer for over 45 years.

Society News.—The Minnesota chapter of the Arthritis and Rheumatism Foundation was recently founded in Minneapolis, with offices at 89 S. 10th St. Elected officers were Dr. Charles H. Slocumb, Rochester, president, and Drs. Macnider Wetherby and Cecil J. Watson, Minneapolis, first and second vice-presidents respectively. The foundation works for establishment of free clinics for treatment and provides for research through establishment of scholarship and laboratory grants.

Personal.—Dr. William L. Benedict, Rochester, was recently honored by his alma mater, the University of Michigan, Ann Arbor, which conferred on him the degree of doctor of laws. ——Edward A. Boyden, Ph.D., professor emeritus of anatomy, University of Minnesota Medical School, who retired as head of the department in June, 1954, attended the sixth International Congress of Anatomy in Paris, July 25-30, where he served as a member of the committee on nomenclature.——Dr. Louis A. Buie, senior consultant in the section of proctology of the Mayo Clinic, Rochester, has been appointed a consultant to the surgeon general of the U. S. Air Force. The appointment will involve inspection trips to various medical treatment facilities maintained by the Air Force and also special assignments to such specific medical problems as may arise from time to time. Dr. Buie is a member of the Judicial Council of the American Medical Association and Chairman of the Council on Constitution and Bylaws.——Dr. Henry W. Meyerding, Rochester, who retired in November, 1949, as professor of orthopedic surgery in the Mayo Foundation, has been elected an honorary member of the Turkish Surgical Association and an honorary fellow of the Philippine College of Surgeons. Dr. Meyerding recently completed an around-the-world tour by airplane, during which time he delivered lectures at various universities and surgical meetings.

NEVADA

State Medical Meeting in Reno.—The Nevada State Medical Association will hold its 52nd annual meeting and the Reno Surgical Society its sixth annual conference conjointly at the Riverside Hotel in Reno Aug. 18-20. Guest speakers will include:

Walter C. Alvarez, Chicago, The Little Strokes; Common Causes of Functional Abdominal Distress.
C. H. Hardin Branch, Salt Lake City, Immediate Management of the Psychiatric Patient; Attitudes Toward Illness.
L. Henry Garland, San Francisco, Treatment of Cancer of the Cervix; Treatment of Primary Cancer of the Breast.
Ray F. Goddard, Albuquerque, N. Mex., Respiratory Emergencies of the Newborn; Respiratory Problems in Children.
Robert A. Kimbrough Jr., Philadelphia, Bleeding During Pregnancy; Carcinoma of Uterine Fundus.
J. Lafe Ludwig, Los Angeles, Medical Legislative Problems; V. A. Problems and Current Federal Medical Legislation.
Carl V. Moore, St. Louis, Clinical Significance of Abnormal Hemoglobins; Iron Deficiency Anemias: Pathogenesis and Treatment.
Francis D. Moore, Boston, Practical Measures in Daily Care of Sick Surgical Patients; Myths and Fables in Surgical Care.
A. Neal Owens, New Orleans, Some Aspects in Treatment of Burns; Management of Cancer of the Mouth and Oral Cavity.
Robert A. Scarborough, San Francisco, Surgical Treatment of Diverticulitis of the Colon; Usefulness and Limitation of Office Procedure in Anorectal Surgery.
David A. Wood, San Francisco, Carcinoma of the Breast with Reference to Adrenalectomy in Its Management; Tumors of the Intestinal Tract with Emphasis on the Relationship of So-Called "Polyps" to Malignancy.

Among the social events will be a cocktail party Wednesday evening; a luncheon Thursday noon in the Sky Room, Hotel Mapes, where Dr. Ludwig, a member of the Committee on Legislation, American Medical Association, will be the speaker; and a cocktail party Thursday evening at Roaring Camp, Harolds Club. There will be a round-table luncheon discussion Friday noon. The banquet, Friday evening, will have as speaker, Ty Cobb.

NEW YORK

University News.—The state health department has completed arrangements with the University of Buffalo Graduate School to establish a new division of the graduate school at the Roswell Park Memorial Institute in Buffalo, which, it is anticipated, will foster graduate education in fields pertinent to cancer research, stimulate investigative programs, and make available unique research facilities.——An annual lectureship was recently inaugurated at the State University College of Medicine at New York City in Brooklyn under the auspices of the Austin Flint Society. Formerly known as the Medical History Club, the society changed its name in honor of Dr. Austin Flint, professor of practical medicine and pathology on the college's first faculty in 1860.——Dr. Isamu Suda, professor of physiology at the Kobe (Japan) Medical School, has been named visting professor of physiology at the State University of New York College of Medicine at New York City, Brooklyn, for one year, effective Sept. 1. Dr. Suda has engaged in special studies on the conditioned reflex, experimental circulatory shock, and electrical phenomena of the central nervous system.

Report on Cancer Death Rates.—According to Drs. Paul Gerhardt and Vincent Handy, Albany, director and assistant director, respectively, of the Bureau of Cancer Control, there has been a steady rise in the cancer death rate among men in upstate New York, while the cancer death rate among women has continued to drop. The continued rise in cancer deaths among men is attributed largely to the "alarming increase in lung cancer among the male population." The lung cancer death rate increased 505% in men but only 55% among women in the 20 year period from 1931-1933 to 1951-1953. The over-all male cancer death rate increased 21% in the period from 1931-1933 to 1951-1953, although the male death rate in several cancer sites declined during the same period by the following amounts: skin, 38%; stomach and duodenum, 42%; liver and biliary passages, 47%; lip, 68%; and mouth, 60%. Drs. Gerhardt and Handy report that the cancer death rate among women has been steadily declining to the point where a woman's chances of dying of this disease today are 16% lower than they were 20 years ago, due largely to a 43% decrease in the death rate from cancer of the uterus. Cancer of the breast shows a 3% increase in mortality, rising from 29.30 per 100,000 population in 1931-1933 to 30.28 in 1951-1953. The over-all cancer mortality rate for both sexes increased only 3.4% (from 166.7 deaths per 100,000 in 1945 to 172.3 per 100,000 population in 1953), but the incidence rate rose 20.3% (from 239.3 to 287.8 cases per 100,000 population) in the same period.

New York City

Research in Arteriosclerosis.—A gift of $150,000 has been made to New York Medical College, Flower and Fifth Avenue Hospitals to establish a laboratory for research in causes of and treatment for arteriosclerosis. The laboratory will be constructed on the fifth floor of the new building, contiguous with the present structure on Fifth Avenue between 105th and 106th streets, that the college is erecting as part of a 10 year expansion and development program. Dr. Harold B. Eiber has been named research director for the laboratory.

Personal.—Dr. David H. Goldstein has been promoted from associate professor to professor of the department of industrial medicine, New York University Post-Graduate Medical School. Dr. Goldstein, who is also medical director of the *New York Times* and medical director of the New York University-Bellevue Medical Center Cancer Prevention and Detection Center, has held teaching appointments with New York University College of Medicine in physiology and preventive medicine from 1936 to 1943 and since 1946.

Services for the Handicapped.—The bureau for handicapped children of the New York City Department of Health announces that the following hospital centers, to which practicing physicians may refer their patients directly, have been approved for the diagnosis, treatment, and rehabilitation of the handicapped:

Hearing centers: (1) Manhattan Eye, Ear and Throat Hospital and (2) Presbyterian Hospital.
Cleft palate centers: (1) Mount Sinai Hospital and (2) New York Hospital.
Poliomyelitis respiratory centers: (1) Goldwater Memorial Hospital and (2) Mount Sinai Hospital.
Cerebral palsy center: Bird S. Coler Memorial Hospital and Home.

Study Program in Human Health.—The New York Hospital-Cornell Medical Center has established a study program designed to investigate the manner in which man's reaction to his environment affects his health. The investigation will be concerned with cultural, social, and interpersonal aspects of human life situations. The study program, under the sponsorship of the department of medicine, is being carried out through a special medical clinic organized for the investigation of bodil disorders in which the setting of the illness, as perceived b the patient, can be studied intensively. The clinic is under th direction of Dr. Harold G. Wolff. Medical training is supe vised by Dr. Lawrence E. Hinkle Jr., Dr. Adrian M. Ostfel and the staff of attending physicians; a psychiatrist, a cultur anthropologist, and a clinical psychologist are in attendance f consultation. The clinic provides an opportunity for the trainir of undergraduate and graduate students under circumstanc that permit a broad study of individual patients and their rel tions to their total environment.

NORTH CAROLINA

Duke Center Celebrates Silver Anniversary.—Duke Universi School of Medicine and Duke Hospital, Durham, celebrat their 25th anniversary on July 21. Since the opening day, Dul Hospital has admitted 310,972 patients from all 48 states a some 14 foreign countries. Duke doctors have treated 2,864,4 ambulatory patients. The medical school has graduated 1,5 doctors and provided postgraduate training for almost 1,0 others. The school of nursing has graduated 1,000 nurses, a the medical center has trained 1,000 persons in allied medic fields. The featured visiting speaker, Dr. Edward L. Turn Chicago, Secretary, Council on Medical Education and Ho pitals, American Medical Association, had as his topic "Wh Duke University Hospital Has Meant to Medical Educati and Medical Care."

TEXAS

County Society Fund to Aid Students.—An educational tr fund, said to be the first in the nation established by a coun society, has been created by El Paso County Medical Socie to provide financial assistance to needy and qualified medic students. Any medical student from El Paso County who attending an accredited medical school in North America m apply to the fund for a loan by writing the El Paso Coun Medical Society's educational committee, which is compos of Dr. Maurice P. Spearman, chairman, Dr. Louis W. Brec and Dr. Russell L. Deter. Selection will be determined by t student's financial need and ability. The fund, which has a lif time of 25 years, is supported by annual assessments of membe of the El Paso County Medical Society. The society will acce bequests but will not engage in solicitation.

VERMONT

Seminars on Heart Disease.—The Vermont Heart Associatio in cooperation with the University of Vermont College Medicine, Burlington, will sponsor a seminar on heart disea by Dr. Wilhelm Raab, head of the cardiovascular research un University of Vermont, at the Bishop DeGoesbriand Hospit Sept. 14-15. A seminar on the electrocardiographic diagnosis auricular and ventricular hypertrophy and strain will be giv by Dr. Eugene Lepeschkin, associate professor of experiment medicine, and Dr. Borys Surawicz, instructor of medicine a research associate in experimental medicine at the Universi of Vermont, Sept. 16-17. Dr. Robert P. Grant of the Nation Heart Institute in Bethesda, Md., and Dr. E. Cabrera of t National Institute of Cardiology in Mexico City will be the gue speakers. For information concerning the seminars write Drs. Raab or Lepeschkin.

WASHINGTON

Society News.—On May 21 the Washington State Society Allergy was formally organized, and the following officers wer elected: president, Dr. Lester W. Mittelstaedt, Seattle; vic president, Dr. Robert A. Stier, Spokane; secretary-treasurer, D Lois Frayser, Seattle; members of the council, Drs. Howard Hull, Yakima, James E. Stroh, Seattle, Leslie E. Hildebran Wenatchee, and Alexander R. Altose, Seattle. The next meetin will be held in Seattle in September at the time of the meetin of the Washington State Medical Association. Any physicia applying allergy to his practice is eligible as an associate membe and may apply to the secretary, Dr. Lois Frayser, 1125 Medica Dental Bldg., Seattle.

GENERAL

Bacteriologists to Establish Certifying Boards.—At its 55th annual convention in New York May 8-12, the Society of American Bacteriologists initiated plans for the creation of an organization that will be empowered to set up certifying boards and also to engage in other activities designed to raise the standards of performance and to enhance the prestige of microbiologists.

Hospital Publication Announces Changes.—According to Dr. Edwin L. Crosby, Chicago, director of the American Hospital Association, *Hospitals*, the journal of the association, will be published twice monthly, beginning Jan. 1, 1956. The editorial staff is being expanded. Subscription and advertising rates are being increased to meet higher publishing costs, increased postal rates, and increased staffing costs.

Research on Schizophrenia.—Grants totaling $71,500 for 17 projects involved in research on schizophrenia were recently announced by F. Barry Ryan Jr., president of the National Association for Mental Health. The grants were made from a $75,000 fund provided by the Supreme Council, 33rd Degree, Scottish Rite, Northern Masonic Jurisdiction, to the National Association for Mental Health. In the last 21 years the fund has given the association more than a million dollars for research projects active in tracing down information about schizophrenia. The fund's program is set forth in a brochure, "Light for Clouded Minds," prepared by Lester Grant with the technical assistance of Dr. William Malamud, Boston, medical director of research for the Scottish Rite, and in a report, "The Scottish Rite Medical Research Program," by Dr. Malamud.

Sanitary Engineering Certification Board.—At its meeting in St. Louis in June, the board of direction of the American Society of Civil Engineers approved a proposed plan for establishing a national board of certification for sanitary engineers. The certifying agency, which will be housed in the headquarters of the American Society of Civil Engineers at New York, will be operated jointly with other professional organizations, including the American Public Health Association, interested in sanitary engineering professional development. The certifying operation, which will be similar to those already used by the medical profession for recognizing specialized competencies, is the first national certifying device ever adopted by the engineering profession. The establishment of the sanitary engineering board is the outcome of more than three years of organizational efforts toward this end.

Inter-American Scholarships.—The Inter-American Foundation for Postgraduate Medical Education (342 Madison Ave., New York) announces fellowship awards totaling $11,400 to seven physicians from Argentina, Chile, Peru, and Mexico for advanced medical training in the United States. The funds were provided through a grant from the Gustavus and Louise Pfeiffer Research Foundation. The Inter-American Foundation, established "to help improve medical education in South American and Latin American countries and to promote friendly inter-American relationships" and supported by contributions from drug companies, general industry, and foundations, has awarded 20 fellowships and supplemental grants in the past two years. Dr. Alberto Chattas, Cordoba, Argentina, is executive director; Dr. George M. Guest, Cincinnati, is president; and Mr. E. R. Leibert, New York City, is executive secretary.

Multiple Sclerosis Heredity Study.—According to the National Multiple Sclerosis Society, which is conducting a nationwide search for identical twins, one or both of whom suffer from multiple sclerosis (THE JOURNAL, July 24, 1954, page 1174; Sept. 18, 1954, page 262), there are 300 to 400 such sets in the United States. This conclusion was reached through studies by Dr. Leonard T. Kurland, chairman of the committee on epidemiology of the society (270 Park Ave., New York). Dr. Kurland's figures were arrived at following the location of 33 sets of twins, one of each pair having multiple sclerosis. The search was initiated in an effort to aid scientists at the University of Illinois under the direction of Dr. Roland P. Mackay, Chicago, in their investigation of the possible causes of multiple sclerosis. The society is issuing another appeal to locate the approximately 350 "missing" sets of twins. Persons who know of twins either identical or fraternal who have this disease are urged to communicate with Ntinos Myrianthopoulos, the Dight Institute for Human Genetics, University of Minnesota, Minneapolis.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

	July, 9, 1955		
Area	Paralytic Type	Total Cases Reported	July 10, 1954, Total
New England States			
Maine	..	1	1
	..	..	..
	1	3	1
Massachusetts	20	24	6
Rhode Island	..	..	..
Connecticut	..	5	8
Middle Atlantic States			
New York	9	25	22
New Jersey	..	3	10
Pennsylvania	..	7	11
East North Central States			
Ohio	4	14	35
Indiana	..	6	7
Illinois	3	5	25
	6	18	34
	3	6	3
West North Central States			
Minnesota	7	13	12
Iowa	2	11	26
Missouri	3	4	14
North Dakota	..	3	1
South Dakota	1	3	1
Nebraska	3	3	9
Kansas	..	3	14
South Atlantic States			
Delaware	2	3	..
Maryland	4	7	2
District of Columbia	..	1	..
Virginia	3	7	10
	..	2	4
	1	9	11
	6	12	11
Georgia	5	6	19
Florida	..	3	47
East South Central States			
	4	5	12
	3	10	13
	..	9	19
	..	..	33
West South Central States			
Arkansas	2	5	15
Louisiana	3	8	7
Oklahoma	..	12	26
Texas	38	76	145
Mountain States			
Montana	..	1	1
Idaho	4	7	..
	..	..	19
	1	2	8
	1	8	7
Arizona	..	..	7
Utah	..	..	1
Nevada	..	4	5
Pacific States			
Washington	3	5	5
Oregon	4	4	9
California	24	43	91
Territories and Possessions			
Alaska	..	1	9
Hawaii	3	3	5
Puerto Rico	5	5	..
Total	178	415	781

Pediatric Residency Fellowships.—The American Academy of Pediatrics will grant 12 or more fellowships for pediatric residents for a period of six months to one year. These fellowships, made possible by a grant from Mead Johnson & Company, have been created to enable young physicians in financial need to complete their pediatric training. The fellowships, which will be granted as of July 1, 1956, carry a stipend of $500 to $1,000, depending on the need and the length of time required to complete training. Deadline for receipt of applications will be March 1, 1956. Requirements for the awards are: (1) a letter from the chief of service indicating that the proposed individual has completed, or will have completed by July 1, 1956, one year of pediatric training credited by the American Board of Pediatrics; that the resident has performed his work ably; and that there is real need for financial assistance; (2) a letter from the resident requesting the fellowship, stating that he intends to enter pediatric private practice at the conclusion of his second year of training. Those interested in applying may correspond with the American Academy of Pediatrics, 610 Church St., Evanston, Ill.

Meeting of National Medical Association.—The National Medical Association will hold its 60th annual convention at the Hotel Alexandria, Los Angeles, Aug. 8-11, under the presidency of Dr. Matthew Walker, Nashville, Tenn. The sessions will open at 10 a. m. Monday with a symposium on peptic ulcer, in which Dr. William P. Longmire Jr., Los Angeles, will discuss the surgical approach and Dr. Ross Golden, New York, will talk on radiology in peptic ulcer. The symposium will be followed by "Preventive Aspects of Chronic Disease" by Dr. Arnold B. Kurlander, director, Chronic Disease Program, U. S. Public Health Service, Washington, D. C. The presidential address Tuesday morning will be followed by greetings from the A. M. A., presented by Dr. Dwight Murray, Napa, Calif., President-Elect of the American Medical Association. A public meeting has been scheduled for Tuesday, 7:45 p. m., at the Bovard Auditorium, University of Southern California campus (3518 University Ave.). The guest speaker will be Goodwin J. Knight, governor of California. The general assembly will meet at the Los Angeles County General Hospital on Wednesday, where a symposium on infertility will be presented at 10 a. m. by the following panel: Dr. Lewis Michelson, San Francisco, and Dr. Sheldon A. Payne, Dr. Richard E. Ottoman, Dr. Edward T. Tyler, and James Peterson, D.D., Ph.D., Los Angeles. The golf tournament will begin Monday, 8:30 a. m., at Fox Hill Country Club golf course. The president's ball is scheduled for Thursday evening, and other social events will include a trip to Catalina, a tour of the city and Hollywood, and a barbecue Sunday at the ranch of Dr. N. Curtis King, Lake Elsinore, Calif. The woman's auxiliary will meet simultaneously.

LATIN AMERICA

ngress on Rheumatic Diseases.—The first Pan American Congress on Rheumatic Diseases will be held in Rio de Janeiro and São Paulo, Brazil, Aug. 14-20. The official subjects include: Rheumatoid Arthritis; Treatment of Rheumatoid Spondylitis; Osteoarthritis; Nonarticular Rheumatism; Rheumatic Fever; and Basic Studies of Collagen Tissue. Participants from the United States include: Dr. Robert Stecher, Cleveland, and Drs. Otto Steinbrocker, Richard H. Freyberg, and Charles Ragan, New York.

Meeting of Pacific Dermatologic Association.—The seventh annual meeting of the Pacific Dermatologic Association will convene in Mexico City Aug. 22-24 under the presidency of Dr. Maximilian E. Obermayer, Los Angeles. The session Monday morning will be held at the Institute of Cardiology, where the presidential address, "Dermatology in Mexico: A Study of Its Contributions," will be delivered at 9:45 a. m. The Monday afternoon session at the General Hospital, service of dermatology, will consist of a demonstration of leprosy by Dr. Fernando Latapí and staff, Mexico City. Tuesday morning will be devoted to a clinicopathological conference. Dr. Hamilton Montgomery, Rochester, Minn., will serve as guest moderator. A demonstration of tropical diseases other than leprosy is scheduled for Wednesday morning at the General Hospital. A joint clinical meeting will be held at the hospital in the afternoon. Patients will be presented by the Mexican Society of Dermatology. Wednesday evening there will be a banquet for members, guests, and ladies.

FOREIGN

International Medical Congress in Verona.—Under the auspices of the United Verona Hospitals, the International Medical Days will be held in Verona, Italy, Sept. 1-4, at Palazzo della Gran Guardia, Piazza Bra. The topics for discussion include: (1) the theory of stress in contemporary medicine; (2) the current problem of virus infections; and (3) cirrhosis of the liver in medicine and surgery. For information, address the International Medical Congress, % Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

Australasian Medical Congress.—The ninth session of the Australasian Medical Congress (British Medical Association) will be held at Sydney, Australia, Aug. 20-27, under the presidency of Sir Archibald Collins. The New South Wales branch of the British Medical Association will act as host for the session. The subjects for the plenary sessions are Cancer; the Control of Infectious Diseases; Rehabilitation; Industrial and Occupational Hazards to Health; and Use and Abuse of Hormones in Medical Practice. Dr. Louis H. Bauer, Hempstead, N. Y., past-president of the American Medical Association, will deliver the Henry Simpson Newland Oration.

International Congress of Plastic Surgery.—Under the sponsorship of the Scandinavian Association of Plastic Surgeons, the first International Congress of Plastic Surgery will convene in Stockholm and Uppsala, Sweden, Aug. 1-5. One delegate from each country represented at the congress will meet Wednesday afternoon to discuss the formation of an International Association of Plastic Surgeons. Thursday at 8:30 a. m. there will be a bus trip to Uppsala, where scientific sessions will be followed by an exhibition of ancient medical books from the famous Waller collection at Uppsala University Library. The afternoon will be devoted to a symposium on burns, after which the group will return to Stockholm. The closing ceremony will be held at the general assembly Friday, 4-5 p. m. The social program includes a reception and cocktails in the Town Hall (Stadshuset), Stockholm, by invitation of the city council, Monday evening; a boat trip to Drottningholm Palace, royal summer residence, including a performance in its 18th century theatre, Wednesday, 5 p. m., followed by an informal congress dinner; and a banquet Friday, 7 p. m. A postcongress excursion, by boat, to the Stockholm Archipelago is projected. Among the scientific presentations will be a paper entitled "Recent Advances in Rotary Abrasive Techniques for the Correction of Acne Scars and Other Skin Defects" and a report on "Freon Mixture" by Dr. Joseph J. Eller, New York City. Dr. Morton I. Berson, New York City, will present a lecture, "Construction of Auricle," illustrated by a film showing the step-by-step construction of an auricle for complete absence, with the use of pedicle, cartilage, and split-skin grafts. Communications should be addressed to: First International Congress of Plastic Surgery, Tord Skoog, M.D., Uppsala, Sweden.

CORRECTION

Fee for Licensure.—In table 25 on page 291 of THE JOURNAL of May 28 it was indicated by a footnote that the fee for licensure on the basis of the certificate of the National Board of Medical Examiners was $25. The fee charged for license on the basis of reciprocity from another state or on the basis of credentials from the national board should have been listed as $100.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

AMERICAN MEDICAL ASSOCIATION PUBLIC RELATIONS INSTITUTE, Drake Hotel, Chicago, Aug. 31- Sept. 1. Mr. Leo E. Brown, 535 N. Dearborn St., Chicago 10, Director.

AMERICAN ASSOCIATION OF NURSING HOMES, Hotel Muehlebach, Kansas City, Mo., Sept. 19-21. Mr. Ira O. Wallace, P.O. Box 366, New Castle, Ky., Secretary.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS, The Homestead, Hot Springs, Va., Sept. 8-10. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

AMERICAN COLLEGE OF HOSPITAL ADMINISTRATORS, Convention Hall, Atlantic City, N. J., Sept. 17-19. Mr. Dean Conley, 620 North Michigan Ave., Chicago 11, Executive Director.

American Congress of Physicial Medicine and Rehabilitation, Hotel Statler, Detroit, Aug. 28-Sept. 2. Dr. Frances Baker, 30 North Michigan Ave., Chicago 2, Secretary.

American Fracture Association, Hotel Fontainebleau, Miami Beach, Fla., Sept. 19-22. Dr. Homer D. Junkin, Paris Hospital, Paris, Ill., Secretary.

American Hospital Association, Traymore Hotel, Atlantic City, N. J., Sept. 19-22. Dr. Edwin L. Crosby, 18 East Division St., Chicago 10, Director.

American Physiological Society Fall Meeting, Tufts College, Medford, Mass., Sept. 6-9. Dr. Allan C. Burton, Univ. of Western Ontario, London, Ont., Canada, Secretary.

American Roentgen Ray Society, Palmer House, Chicago, Sept. 20-23. Dr. Barton R. Young, Germantown Hospital, Philadelphia 44, Secretary.

American Veterinary Medical Association, Radisson Hotel and Auditorium, Minneapolis, Aug. 15-18. Dr. J. G. Hardenbergh, 600 South Michigan Blvd., Chicago 5, Executive Secretary.

Biological Photographic Association, Wisconsin Hotel, Milwaukee, Aug. 30-Sept. 2. Miss Jane H. Waters, c/o Pavelle Color, Inc., 533 W. 57th St., New York 19, Executive Secretary.

Colorado State Medical Society, Shirley-Savoy Hotel, Denver, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2, Executive Secretary.

Industrial Health Conference, Shamrock Hotel, Houston, Texas, Sept. 22-23. Dr. Sidney Schnur, 411 Medical Arts Bldg., Houston 2, Texas, Chairman.

Montana Medical Association, Baxter Hotel, Bozeman, Sept. 15-18. Mr. L. R. Hegland, P.O. Box 1692, Billings, Executive Secretary.

National Medical Association, Los Angeles, Aug. 8-11. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

Nevada State Medical Association, Riverside Hotel, Reno, Aug. 18-20. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

New England Health Institute, Colby College, Waterville, Me., Aug. 30-Sept. 1. Dr. Edward W. Colby, City of Portland Health Dept., Portland, Me., Chairman.

Pacific Dermatologic Association, Mexico, D. F., Mexico, Aug. 22-24. Dr. Ben A. Newman, 436 N. Roxbury Drive, Beverly Hills, Calif., Secretary.

Pennsylvania, Medical Society of the State of, William Penn Hotel, Pittsburgh, Sept. 18-23. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

Regional Meetings, American College of Physicians:
Jamestown, N. D., Sept. 10. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

Reno Surgical Society, Reno, Nev., Aug. 18-20. Dr. James R. Herz, 509 Humboldt St., Reno, Nev., Secretary.

Rocky Mountain Radiological Society, Shirley-Savoy Hotel, Denver, Aug. 18-20. Dr. John H. Freed, 4200 East 9th St., Denver 20, Secretary.

Society of General Physiologists, Marine Biological Laboratory, Woods Hole, Mass., Sept. 9-10. Dr. A. M. Shanes, National Institutes of Health, Bethesda 14, Md.

Southwestern Surgical Congress, Muehlebach Hotel, Kansas City, Mo., Sept. 5-7. Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secretary.

U. S. Chapter, International College of Surgeons, Convention Hall, Philadelphia, Sept. 12-15. Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago 10, Secretary.

Utah State Medical Association, Union Bldg., Salt Lake City, Sept. 8-10. Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2, Executive Secretary.

Washington State Medical Association, Olympic Hotel, Seattle, Sept. 11-14. Dr. Frederick A. Tucker, 1309 Seventh Ave., Seattle 1, Secretary.

Western Association of Railway Surgeons, Las Vegas, Nev., Sept. 22-24. Dr. Leo L. Stanley, 1322 Fifth Ave., San Rafael, Calif., Secretary.

West Virginia State Medical Association, White Sulphur Springs, Aug. 18-20. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

FOREIGN AND INTERNATIONAL

Australasian Medical Congress, Sydney, N.S.W., Australia, Aug. 20-27. For information write: Federal Council of the B.M.A. in Australia, 135 Macquaire St., Syndey, N.S.W., Australia.

Canadian Society for the Study of Fertility, Royal York Hotel, Toronto, Ont., Canada, Oct. 6-8. Dr. Earl R. Plunkett, 469 Waterloo St., London, Ont., Canada, Secretary.

Congress of International Association of Limnology, Helsinki, Finland, July 26-Aug. 7, 1956. For information address: Dr. H. Luther, Snellmansgatan 16 C 36, Helsinki, Finland.

Congress of International Society for Research on Anesthesia, Miami Beach, Fla., U.S.A., Mar. 12-15, 1956. For information write: Dr. R. J. Whitacre, 13951 Terrace Road, Cleveland 12, Ohio, U. S. A.

International Academy of Legal and Social Medicine, Plenary Conference, Genes, Italy, Oct. 13-17. Prof. Domenico Macaggi, Institut de Medicine legale, Universite de Genes, Genes, Italy, President.

International Conference of Medical Librarians and Reference Librarians, University Hall, Brussels, Belgium, Sept. 10. For information address: Miss Ch. de Looze, Librarian % Oeuvre Nationale Belge de Defense contra la Tuberculose, 56, rue de la Concorde, Brussels, Belgium.

International Conference on Radiobiology, Cambridge, England, Aug. 14-17. For information write: Dr. Barbara E. Holmes, Dept. of Radiotherapeutics, Univ. of Cambridge, Downing St., Cambridge, England.

International Congress of Allergology, Rio de Janeiro, Brazil, S. A., Nov. 6-13. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7^e, France, Secretary General.

International Congress of Angiology and Histopathology, Fribourg, Switzerland, Sept. 2-5. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8^e, France.

International Congress of Biochemistry, Brussels, Belgium, Aug. 1-6. Prof. C. Liebecq, 17 Place Delcour, Liège, Belgium, Secretary General.

International Congress of Criminology, London, England, Sept. 11-18. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

International Congress of European Society of Haematology, Freiburg i,Br., Germany, Sept. 20-24. Prof. Dr. L. Heilmeyer, Hugstetter Strasse 55, Freiburg i,Br., Germany, Chairman.

International Congress of International College of Surgeons, Buenos Aires, Argentina, S. A., Nov. 19-24, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

International Congress of International Society of Bronchoesophagology, Buenos Aires, Argentina, S. A., Oct. 28-29. Dr. Juan Carlos Arauz, Cangallo 4015, Buenos Aires, Argentina, S. A., Secretary General.

International Congress of Librarianship and Documentation, Brussels, Belgium, Sept. 11-18. For information write: Dr. A. C. Breycha-Vauthier, Librarian, United Nations, Geneva, Switzerland.

International Congress of Medical Professional Jurisdiction, Medical Ethics, and Comparative Medical Law, Paris, France, Sept. 30-Oct. 3. Dr. J. R. DeBray, Conseil National de L'Ordre des Medécins, 60, Boulevard Latour-Maubourg, Paris 7e, France, Secretary General.

International Congress of Military Medicine and Pharmacy, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, International Committee of Military Medicine and Pharmacy, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

International Congress of Neo-Hippocratic Medicine, Montecatini, Terme, Italy, May 20-22, 1956. Prof. P. Delore, 13 rue Jarente, Lyon, France, Secretary-General.

International Congress of Neuropathology, London, England, Sept. 12-17. Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London, W.9, England, Secretary.

International Congress of Paediatrics, Copenhagen, Denmark, July 22-27, 1956. Professor P. Plum, Rigshospitalet, Copenhagen, Denmark, President.

International Congress of Physical Medicine, Copenhagen, Denmark, August 20-24, 1956. Dr. B. Strandberg, Kobenhavns amts sygehus i Gentofte, Dept. of Rheumatology and Physical Medicine, Hellerup, Denmark, Honorable Secretary.

International Congress of Plastic Surgery, Stockholm, Sweden, Aug. 1-4, and Uppsala, Sweden, Aug. 5. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

International Congress of Radiology, Mexico, D. F., Mexico, July 22-28, 1956. Dr. Jose Noriega, Tepic 126 (2e piso), Mexico, D. F. 7, Mexico, Secretary General.

International Congress on Urinary Lithiasis, Evian, France, Sept. 2-4. Mr. Rossollin-Grandville, Direction Cachet, Evian (Hte-Savoie), France, Secretary General.

International Congress of World Confederation for Physical Therapy, New York, New York, U. S. A., June 17-23, 1956. For information address: Miss Mildred Elson, American Physical Therapy Association, 1790 Broadway, New York 19, New York, U. S. A.

International General Medical Congress, University of Rosario Medical College, Rosario, Argentina, S. A., Nov. 7-12. Dean Jose Imhoff, Santa Fé 3100, Rosario, Argentina, S. A., Chairman.

International Medical Congress, Verona, Italy, Sept. 1-4. For information write: c/o Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

International Office of Documentation of Military Medicine, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

International Physiological Congress, Brussels, Belgium, July 29-Aug. 5, 1956. For information address: Prof. J. Reuse, Faculte de Medicine et de Pharmacie, 115 Boulevard de Waterloo, Brussels, Belgium.

International Society for the Study of Biological Rhythms, Stockholm, Sweden, Sept. 15-17. For information write: Prof. Ture Petrén, Karolinska Institutet, Stockholm 60, Sweden.

International Vitamin E Congress, Cini Foundation, Island of San Giorgio Maggiore, Venice, Italy, Sept. 5-8. Prof. Emilio Raverdino, via Pietro Verri 4, Milano, Italy, Secretary.

Neuroradiologic Symposium, London, England, Sept. 13-17. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

Pan American Congress of International College of Surgeons, Mendoza City, Argentina, S. A., Oct. 22-26. For information address: Secretary, Caseros Av. 2154, Buenos Aires, Argentina, S. A.

Pan American Congress of Ophthalmology, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, Secretary General.

Pan American Congress on Rheumatic Diseases, Rio de Janeiro and Sao Paulo, Brazil, S. A., Aug. 14-20. For information write: Dr. Waldemar Bianchi, 126 Avenida Franklin D. Roosevelt, Rio de Janeiro, Brazil, S. A.

Pan American Medical Social Convention, Bogota, Colombia, S. A., Oct. 15-22. Dr. Leopoldo E. Araujo, Avenida de los Presidentes Num. 506, Apartado 2589, La Habana, Cuba, Secretary.

VENEZUELAN CONGRESS OF MEDICAL SCIENCES, Caracas, Venezuela, S. A., Nov. 18-26. Dr. A. L. Briceno Rossi, Apartado 4412, Ofic. del Este, Caracas, Venezuela, S. A., Secretary General.

WORLD CONGRESS OF ANESTHESIOLOGISTS, Scheveningen, Netherlands, Sept. 5-10. For information write: Mr. W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven, Netherlands.

WORLD CONGRESS ON FERTILITY AND STERILITY, Naples, Italy, May 18-26, 1956. For information address: Prof. G. Tesauro, S. Andrea della Dame, 19, Naples, Italy.

WORLD CONGRESS OF JEWISH PHYSICIANS, Haifa, Tel-Aviv, Jerusalem, Israel, Aug. 10-17. Dr. Z. Avigdori, P.O.B. 1342, Jerusalem, Israel, Chairman.

WORLD FEDERATION FOR MENTAL HEALTH, Istanbul, Turkey, Aug. 21. For information write: Miss E. M. Thornton, 19 Manchester St., London, W.1, England.

WORLD MEDICAL ASSOCIATION, Vienna, Austria, Sept. 20-26. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

CALIFORNIA: *Written.* Los Angeles, Aug. 22-25; and Sacramento, Oct. 17-20. *Oral and Clinical Examinations for Foreign Medical School Graduates.* Los Angeles, Aug. 21; and San Francisco, Nov. 13. *Oral Examination for Reciprocity Applications.* Los Angeles, Aug. 20; and San Francisco, Nov. 12. Sec., Dr. Louis E. Jones, Room 536, 1020 N St., Sacramento.

MONTANA: *Examination and Reciprocity.* Helena, Oct. 4-5. Sec., Dr. Sidney A. Cooney, 7 West 6th Ave., Helena.

NEW HAMPSHIRE: *Examination and Reciprocity.* Concord, Sept. 14. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW MEXICO:* *Examination and Reciprocity.* Santa Fe, Nov. 21-22. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave., Santa Fe.

[illegible]: *Endorsement.* Columbus, Aug. 29-30 and Oct. 3-4. Sec., Dr. H. M. Platter, Wyandotte Bldg., Columbus 15.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. John E. Kennedy, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

COLORADO: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

MICHIGAN: *Examination and Endorsement.* Detroit and Ann Arbor, Oct. 14-15. Sec., Mrs. Anne Baker, 410 W. Michigan Ave., Lansing 15.

OKLAHOMA: *Examination.* Oklahoma City, August 26-27. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

TEXAS: *Examination.* Various cities to be determined by number of applicants from the various areas, October. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

WISCONSIN: *Examination.* Madison, Sept. 23; Milwaukee, Dec. 3. Sec., Mr. William H. Barger, 621 Ransom St., Ripon.

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

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*Basic Science Certificate required.

MAGAZINE-TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Monday, Aug. 1

NBC-TV, 9 p. m. EDT. "Medic" repeats "Boy in the Storm" from last season's programs.

MAGAZINES

Woman's Home Companion, August, 1955

"New Promise of Easier Childbirth," by Robert Landesman, M.D.

An assistant professor at Cornell University Medical School says "the key to medicine's new ability to make childbirth safer and easier is the recent mastering of the hormone oxytocin (Pitocin) which controls labor."

Reader's Digest, August, 1955

"This Bosom Business," by Goodrich C. Schauffler, M.D.

The author decries the "exaggerated interest in the female breast . . . stimulated by the press, the movies, TV and radio." He says "what worries most physicians is that the breasts are becoming over-emphasized symbols of sex and that their splendid biological purpose is rapidly falling into the discard." He recommends a renewed interest in breast feeding "for the health of the baby, for the health of the mother, for the pleasure of both."

"Young Man in White," by Quentin Reynolds

An ace reporter reports on a day in the life of a surgical intern. Included in the article is information on the total cost of medical education and intern and resident salaries.

"Six Ways to Beat the Heat," by Ruth and Edward Brecher

Condensed from the August issue of *Today's Health*, the article explains the workings of the body's "cooling system" and concludes with six suggestions for keeping comfortable when the mercury soars: drink liquids, increase salt intake, relax, use fans to circulate air, keep heads of small children moistened, and avoid too much exposure to sun.

Family Circle, August, 1955

"That Amazing Postnatal Recovery," by Evelyn Emig Mellon

An explanation of the puerperium period after childbirth, with a description of physical changes in the new mother's body and advice on how she should care for herself.

Redbook, August, 1955

"The Most Crucial Hour of Life," by J. D. Ratcliff

"A baby's chances of survival are greater today than ever before—and they should be even greater as we continue to unravel the mysteries of birth." According to the author, among the ways dangers are being minimized are: use of Nisentil to give the mother a high degree of pain relief with almost no unfavorable effects on the infant; availability of equipment to administer oxygen; more caution in using forceps; improved methods of handling premature babies; and "the intelligent use of Caesarean delivery." He also says childbirth should become still safer when hospitals have a device developed at Johns Hopkins Medical School that gives a continuous record of the baby's pulse during the delivery process.

Household, August, 1955

"Facial Scars—A New Cure," by Eileen Burke

"Over 500 physicians around the country—mostly dermatologists or plastic surgeons—are equipped to handle plastic planing." The process involves "freezing" the face, then planing superficial scar tissue away with a wire brush. The author quotes Dr. Abner Kurtin, who is credited with developing the process, as saying cost of the procedure would average $300.

Saturday Evening Post, July 23, 1955

"How It Feels to Catch Fire," by Richard Powell Carter

When the author came down with herpes zoster he started a search, first for a treatment, then for information on the condition. He reports that "there is little doubt that it is a virus" and that cortisone has been used with some success, but the medical profession has no cure.

DEATHS

Speed, Kellogg ⊕ of Highland Park, Ill., and Laguna Beach, Calif., died at the Presbyterian Hospital, Chicago, July 2, aged 76, of cardiovascular disease. Born in Cleveland Jan. 17, 1879, he graduated from the University of Chicago in 1901, B.S. cum laude, and worked from 1901 to 1902 as a graduate fellow in chemistry at the university. Before receiving his M.D. degree from Rush Medical College in 1904, he spent three months studying at the University of Leipzig and traveling in Russia, Finland, and the Scandinavian countries, then after an internship at Cook County Hospital, Chicago, he started practice in Chicago. He was associate in surgery at Rush Medical College from 1905 to 1908, when he transferred to Northwestern University Medical School, going from associate to associate professor there from 1908 to 1918. During these years he was on the staff of Mercy Hospital, Chicago. From 1912 to 1933 he was on the attending staff of Cook County Hospital. In 1919 he returned to the faculty of Rush Medical College. Starting as assistant professor, later becoming professor of surgery and at the time of his death was professor emeritus of clinical surgery (Rush) University of Illinois College of Medicine. He was attending surgeon and later consulting surgeon at the Presbyterian Hospital, Chicago, since 1919; attending surgeon, Highland Park and Lake Forest, Ill., hospitals; attending surgeon for many years at Provident Hospital, Chicago; consulting surgeon and lecturer at the U. S. Naval hospitals in San Diego, Calif., and Great Lakes, Ill., also at the Veterans Administration Hospital, Long Beach, Calif., for the past three years; honorary consulting surgeon at the Hoag Memorial (Presbyterian) Hospital, Newport Beach, Calif., also the Orange (Calif.) County General Hospital, and consulting surgeon for the Chicago, Milwaukee and St. Paul Railroad.

KELLOGG SPEED, 1879-1955

Dr. Speed was a founder-member of the American Board of Surgery and of the American Board of Orthopedic Surgery; member of the American Surgical Association since 1918, Western Surgical Association (president 1927 to 1928), Chicago Surgical Society, American Orthopedic Association, American Association for the Surgery of Trauma (first president 1938 to 1939), Societé Internationale de Chirurgie (speaker-delegate, Paris, 1920), Institute of Medicine of Chicago, and Chicago Pathological Society. He was an honorary member of the Los Angeles Surgical Society, Los Angeles Orthopedic Society, Seattle Surgical Society, Omaha Clinical Association, American Academy of Orthopaedic Surgeons, Chicago Orthopaedic Society, and the first honorary member of the Los Angeles chapter of the Western Orthopedic Association. He was a member of the board of governors, American College of Surgeons and was a trustee of Rush Medical College.

Dr. Speed was a member of the Special Committee on Fractures, Cooperative Committee, American Medical Association, from 1936 to 1951 and Chairman from 1938 to 1951. He was chairman for more than 20 years of the Chicago Regional Fracture Committee of the American College of Surgeons and was also a member of the National Committee on Trauma of the American College of Surgeons.

In 1938 he went to Australia as a guest lecturer on fractures at the University of Sydney. He was awarded a citation from the University of Chicago in 1942 and received a Certificate of Appreciation from the American Medical Association in 1951 for 25 years' service as Chairman of the Fracture Exhibit. He was given a distinguished service award from the Medical Alumni Association, University of Chicago, 1954.

The fracture service that he instituted at Cook County Hospital has been copied by many other institutions. He was instrumental in having fracture first-aid equipment installed for the first time in police cars and ambulances of Chicago. Among his original surgical methods are reduction of shoulder dislocation, fusion of the hip joint, and the anterior approach to vertebral bodies. Referring to fracture of the neck of the femur he originated the phrase "the unsolved fracture" in the oration he delivered before the Clinical Congress of the American College of Surgeons in Boston in 1934. As an operating surgeon and clinician, his methods were always conservative.

In 1916 he was sent overseas with the rank of Hon. Lieut. Col., Royal Army Medical Corps, as head of the "Murphy Unit," which was placed in command of No. 23 General Hospital, British Expeditionary Forces, at Etaples, France. From there he headed a surgical team operating behind the front lines in Belgium. There he acquired a severe Clostridium perfringens (Welch's bacillus) infection in his left hand that threatened to end his career. However, when the United States entered the war in 1917, he returned as Major, later Lieut. Col., M. C., in charge of the Surgical Division of U. S. Base Hospital 12, which took over General Hospital No. 18, British Expeditionary Force, France, in May, 1917. In 1918 he transferred to work in various mobile hospitals and evacuation centers close to the Aisne-Marne Front, Somme Offensive Lys, St. Mihiel, and Meuse-Argonne engagements. He was decorated by both the British and the United States governments.

At the close of World War I he returned for a time for further work with Sir Robert Jones of Liverpool, with whom he first studied in 1915. He was the author of the textbook, "Fractures and Dislocations," four editions (1916-1942); a monograph, "Traumatic Injuries of the Carpus," (1925); co-author of the "Primer on Fractures," American Medical Association, six editions; co-author, "Names of Surgical Operations," (1935); author of the chapter on general surgery in "History of Medical Practice in Illinois," (1850-1900) vol. 2, (1955), and some 200 articles chiefly on general surgical and orthopedic subjects.

Lowsley, Oswald Swinney ⊕ New York City; born in Santa Barbara, Calif., Sept. 4, 1884; Johns Hopkins University School of Medicine, Baltimore, 1912; specialist certified by the American Board of Urology; past-president of the American Urological Association; a fellow of the American College of Surgeons and the International College of Surgeons; member of the New York Academy of Medicine, International Society of Urology, Royal Society of Great Britain, and other scientific societies here and abroad; in 1938, president of the Society of Alumni of Bellevue; honorary professor of the University of Haiti and the University of Santo Domingo; held decorations from Brazil, Ecuador, the Dominican Republic, and the Republic of Haiti; served in the U. S. Navy during World War I; since 1942 honorary consultant to the Surgeon General of the U. S. Navy; past honorary consultant surgeon of the New York Police Department; consultant and first director of the James Buchanan Brady Foundation at New York Hospital; president and director of the Oswald Swinney Lowsley Foundation, Inc., of St. Clare's Hospital, where he was consultant in urology; consulting urologist, Hospital for Special Surgery in New York City, Peekskill (N. Y.) Hospital, Jamaica (N. Y.) Hospital, Nassau Hospital in Mineola, St. Agnes Hospital in White Plains, St. Luke's Hospital

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⊕ Indicates Member of the American Medical Association.

in Newburgh, Monmouth Memorial Hospital in Long Branch, N. J., Fitkin Memorial Hospital in Neptune, N. J., Englewood (N. J.) Hospital, Norwalk (Conn.) Hospital, Stamford (Conn.) Hospital, Jersey City (N. J.) Medical Center, and the National Jewish Hospital in Denver; editor of "Oxford Looseleaf Urology" and "Yearbook of Urology"; joint author with Dr. T. J. Kirwin of a "Textbook of Urology," 'Urology for Nurses," and "Clinical Urology"; developed an operation for calculus in the renal pelvis, a method of repair of renal wounds, and an operation for the repair of hypospadias; died in Stamford, Conn., June 4, aged 70, of coronary thrombosis.

Poncher, Henry George ⊕ Valparaiso, Ind.; born in Odell, Ill., Feb. 14, 1902; University of Michigan Medical School, Ann Arbor, 1927; from 1924 to 1927 research assistant in the department of pediatrics at his alma mater; joined the faculty as instructor in pediatrics at the University of Illinois College of Medicine in Chicago, where he was later assistant professor, associate professor, and professor in the department of pediatrics and head of the department; was the first member of the faculty to receive in the same year two Raymond B. Allen Instructorship awards, designed to honor excellency in individual instruction rendered by faculty members to students; professor of human biology and director of student health at Valparaiso University; member of the American Pediatric Society, American Academy of Pediatrics, Central Society for Clinical Research, Chicago Pediatric Society, Society for Research in Child Development, Chicago Heart Association, American Heart Association, Institute of Medicine of Chicago, Sigma Xi, and Alpha Omega Alpha; formerly chairman of the Rheumatic Council of Chicago; on the staff of the Porter Memorial Hospital; at one time vice-chief of staff, La Rabida Jackson Park Sanitarium in Chicago; served as editor of "Yearbook of Pediatrics"; member of editorial board of *Journal of Pediatrics;* contributor of chapters on pediatrics in textbooks; died May 31, aged 3, of a heart attack.

en, Abraham Herbert ⊕ Captain, U. S. Navy, retired, Haverd, Pa.; born in Philadelphia May 21, 1881; Medico-Chirurgial College of Philadelphia, 1903; appointed a lieutenant (j. g.), Medical Corps, U. S. Navy, on May 2, 1906; advanced through the various ranks until promoted to captain July 1, 1928; placed on the retired list of officers of the Navy Jan. 1, 1943; during more than 36 years of service in the medical department of the Navy, served as district medical officer, 4th Naval District, Philadelphia; on the USS Dubuque, Washington, Connecticut, Hannibal, Texas, Maine, Olympia, and Mercy; in the Naval hospitals, Philadelphia and Las Animas, Colo.; with the 1st Provisional Regiment, U. S. Marines, in Camp Columbia, Havana, Cuba; as brigade surgeon, 1st Marine Brigade, U. S. Marine Corps, Port Au Prince, Haiti; at the Marine Barracks, Quantico, Va., and the Marine Corps Base, San Diego, Calif., at the Naval Ammunition Depot, Fort Mifflin, Pa., and at the Navy Yards, Philadelphia, and Pearl Harbor, T. H.; served at the Pharmacist's Mates' School in Portsmouth, Va.; held the Victory medal (Atlantic Fleet Clasp) and the Naval Expeditionary medal; died May 25, aged 74.

Hawk, George William ⊕ Sayre, Pa.; born in Orwin, Pa., Nov. 30, 1885; University of Pennsylvania School of Medicine, Philadelphia, 1911; member of the founders group of the American Board of Surgery; president-elect of the Medical Society of the State of Pennsylvania; helped organize the Wainwright Tumor Society, of which he was once president; past-president of the Bradford County Medical Society; member of the New York and New England Association of Railroad Surgeons and the American Association of Railway Surgeons; fellow and member of the board of governors of the American College of Surgeons; member of the osteopathic surgeons' examining board, Department of Public Instruction, State of Pennsylvania; associate in surgery, Guthrie Clinic, Robert Packer Hospital; chief surgeon for the Lehigh Valley Railroad; died June 9, aged 69, of carcinoma of the gallbladder.

Holt, William ⊕ Portland, Maine; born in Boston Jan. 9, 1888; Medical School of Maine, Portland, 1919; specialist certified by the American Board of Radiology; member of the American College of Radiology and the American Radium Society; fellow of the American College of Surgeons; a county medical examiner for many years; served as secretary-treasurer of the Cumberland County Medical Society; for one term served on the city council; past-president and vice-president of the Maine Medico-Legal Society; formerly assistant superintendent of the Charles V. Chapin Hospital and the Rhode Island General Hospital in Providence, and school physician for a year at Phillips Exeter Academy in Exeter, N. H.; radium consultant on the staff of the Maine General Hospital, where he died May 17, aged 66, of coronary thrombosis.

Dane, Walter Henry ⊕ Albuquerque, N. Mex.; born in Warsaw, Poland, May 5, 1895; Uniwersytet Jozefa Pilsaudskiego, Warszawa, Poland, 1922; specialist certified by the American Board of Otolaryngology; came to the United States in 1943 and served on the staff of several New York hospitals until 1951, at which time he moved to Albuquerque and assumed the position of chief of eye, ear, nose, and throat section of Veterans Administration Hospital; on the staffs of the Presbyterian, St. Joseph, and Bataan Memorial Methodist hospitals; died in London, England, May 18, aged 60, of coronary thrombosis, while enroute to a meeting of the International College of Surgeons in Geneva, Switzerland.

Wiltberger, Percy Barnette ⊕ Columbus, Ohio; born in Hinton, W. Va., Feb. 4, 1892; Ohio State University College of Medicine, Columbus, 1924; specialist certified by the American Board of Public Health; member of the American Academy of General Practice and the Aero Medical Association; member of the board of directors of the Ohio Academy of General Practice; past-president of the Airline Examiners Association; formerly county health commissioner; served during World Wars I and II; medical examiner for the Civil Aeronautics Administration; on the staffs of the Grant, White Cross, and St. Anthony hospitals; died May 28, aged 63, of myocardial infarction.

Weyerbacher, Arthur Ferdinand ⊕ Indianapolis; born in 1883; Indiana University School of Medicine, Indianapolis, 1909; clinical professor emeritus of general urinary surgery at his alma mater; specialist certified by the American Board of Urology; member of the American Urological Association; fellow of the American College of Surgeons; for 17 years treasurer of the Indiana State Medical Association; resigned in 1944 as a member of the city board of health; served during World War I; consultant at the St. Vincent's, Methodist, and Indianapolis General hospitals; died May 16, aged 71, of arteriosclerosis and cerebral infarction.

Van Duzen, Rex Edward ⊕ Dallas, Texas; born in Breckenridge, Mich., Nov. 15, 1893; University of Michigan Medical School, Ann Arbor, 1917; on the faculty of his alma mater, 1919-1920; in 1949 member of the House of Delegates of the American Medical Association serving as vice-chairman of its Section on Urology from 1951 to 1953, when he became chairman; member of the American Urological Association; served in France during World War I; associated with Baylor University, Parkland, Methodist, Bradford Memorial hospitals, and St. Paul's Hospital, where he died May 24, aged 61, of coronary thrombosis.

Alderman, Jerome Elliot ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1934; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; member of the staffs of the Syracuse Memorial, Syracuse Psychopathic, St. Joseph's, and General hospitals; consultant to the Wieting-Johnson Hospital; died in Atlantic City, N. J., May 11, aged 45, of acute coronary occlusion.

Baker, Elwood ⊕ Dermott, Ark.; Memphis (Tenn.) Hospital Medical College, 1901; served during World War II; local and dispensary surgeon for the Missouri Pacific Railway Company; died in St. Mary's Hospital May 30, aged 81, of cancer.

Bird, Benjamin W. ⊕ Princeton, W. Va.; Rush Medical College, Chicago, 1933; interned at the Illinois Central Hospital in Chicago and the Mercer Memorial Hospital in Princeton; served a residency at the Presbyterian Hospital in Chicago; president of the West Virginia Academy of Ophthalmology and Otolaryngology; died June 14, aged 48, of coronary thrombosis.

Bowman, Wilbur Morrison, Petersburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1924; served during World War II; city health officer; on the staff of the Petersburg Hospital; died May 6, aged 56.

Bryant, Robert Lee ⊕ Arkadelphia, Ark.; University of Arkansas School of Medicine, Little Rock, 1932; served during World War II; member of the American Academy of General Practice; interned at St. Vincent's Infirmary in Little Rock; died May 29, aged 54.

Burleson, Joseph J. ⊕ Antoine, Ark. (licensed in Arkansas in 1903); died June 4, aged 79, of cerebral hemorrhage and chronic nephritis.

Cameron, Donald William ⊕ Pittsburgh; University of Pittsburgh School of Medicine, 1910; fellow of the American College of Surgeons; member of the Pittsburgh Academy of Medicine; served during World War I; on the staff of the Western Pennsylvania Hospital; died May 28, aged 69, of cerebral hemorrhage.

Carrier, Sydney Smith ⊕ Pittsburgh; Jefferson Medical College of Philadelphia, 1904; served during World War I; an associate member of the American Medical Association; died April 20, aged 72.

Carroll, James Vincent ⊕ North Platte, Neb.; St. Louis University School of Medicine, 1947; on the staffs of the Ogallala (Neb.) Hospital, North Platte Memorial Hospital, and St. Mary Hospital; died in Durango, Mexico, May 6, aged 34, *in an airplane accident.*

Chisholm, Roderick B., Griswold, Iowa; Trinity Medical College, Toronto, Canada, 1897; served as president of the school board; died April 5, aged 88, of pneumonia.

Cohen, Morris Aaron ⊕ Pittsburgh; University of Pittsburgh School of Medicine, 1914; served during World War I; on the staff of the Belvedere General Hospital and the Western Pennsylvania Hospital, where he died May 18, aged 63, of surgical shock, hemorrhage, and diaphragmatic hernia.

Corkill, Clifford Clayton ⊕ Douglas, Mich.; Rush Medical College, Chicago, 1925; associated with the Holland City (Mich.) Hospital and Community Hospital; formerly director of the Ontonagon-Baraga counties health unit located at Ontonagon and in charge of the Menominee County Health Department located in Menominee; died in Allegan (Mich.) Health Center May 21, aged 58, of injuries received in an automobile accident.

Fairchild, Charles Claude, Boise, Idaho; Trinity Medical College, Toronto, Canada, 1891; died May 13, aged 86, of arteriosclerotic heart disease.

Ferguson, Albert Stuart ⊕ Newburgh, N. Y.; Albany (N. Y.) Medical College, 1917; formerly health officer of Marlboro; served on the staffs of the Cornwall (N. Y.) Hospital, Highland Hospital in Beacon, Goshen (N. Y.) Hospital, and the St. Luke's Hospital; died in Marlboro May 13, aged 64, of coronary thrombosis.

Ferguson, John Robert, Providence, Ky.; Meharry Medical College, Nashville, Tenn., 1921; died April 4, aged 64, of a heart attack.

Frampton, James ⊕ Mount Pleasant, S. C.; Medical College of the State of South Carolina, Charleston, 1894; on the courtesy staff of the Roper Hospital in Charleston, where he died May 9, aged 82, of arteriosclerotic heart disease.

Friedman, Louis ⊕ New York City; New York University Medical College, New York City, 1897; an associate member of the American Medical Association; consultant surgeon at Sydenham Hospital; on the staffs of the Harlem Hospital and the New York Polyclinic Medical School and Hospital, where he died April 9, aged 79, of arteriosclerotic heart disease.

Gaston, John Campbell, Beaver Falls, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1907; member of the Medical Society of the State of Pennsylvania; on the staff of the Providence Hospital in Beaver Falls and the Beaver Valley General Hospital in New Brighton, where he died March 29, aged 74, of carcinoma of the sigmoid colon.

Gough, Lawrence Edward ⊕ Dayton, Ohio; Loyola University School of Medicine, Chicago, 1933; interned at the Good Samaritan Hospital in Cincinnati; died in the Mount Carmel Hospital, Columbus, May 26, aged 48, of myocardial infarction.

Greene, George Joseph, Cleveland; Georgetown University School of Medicine, Washington, D. C., 1930; city police surgeon; past-president of the city board of education; served during World War II; on the staff and formerly intern at St. John's Hospital; on the staff of St. Vincent's Charity Hospital, where he died June 4, aged 51, of coronary thrombosis.

Hammer, Charles Anthony, Brighton, Mich.; University of Louisville (Ky.) Medical Department, 1912; died May 11, aged 71, of coronary thrombosis.

Hangen, William Meyer, St. Louis; Barnes Medical College, St. Louis, 1908; died Feb. 3, aged 73, of carcinoma of the upper intestinal tract.

Hanson, Joel Hjalmar ⊕ San Carlos, Calif.; Jefferson Medical College of Philadelphia, 1918; died in Sequoia Hospital, Redwood City, May 30, aged 62, of rheumatic heart disease.

Hastings, James Barnard ⊕ Alton, Ill.; Washington University School of Medicine, St. Louis, 1905; in 1917 president of the Madison County Medical Society; past-president of the Alton Medical Society; plant physician for Wood River refinery of Standard Oil Company; served in France during World War I; on the staffs of the Alton Memorial Hospital and St. Joseph's Hospital, where he died May 21, aged 72, of probable cerebral vascular accident and hypertensive heart disease.

Headings, Donald Moore ⊕ Norristown, Pa.; Jefferson Medical College of Philadelphia, 1924; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; on the staffs of the Montgomery and Sacred Heart hospitals; died in Skytop, Pa., May 17, aged 55, of glioblastoma.

Henderson, Clair Abie, Savannah, Ga.; University of Georgia School of Medicine, Augusta, 1934; interned at the Greenville General Hospital; later became associated with the South Carolina State Health Department; health commissioner of Chatham County; served as commissioner of health of Terrell County with headquarters in Dawson, and of Augusta and Richmond County; killed in an automobile accident in Pensacola, Fla., May 14, aged 50.

Henry, James Clayton ⊕ East St. Louis, Ill.; Chicago College of Medicine and Surgery, 1912; veteran of the Spanish-American War; served on the staffs of St. Mary's Hospital and the Christian Welfare Hospital, where he died May 24, aged 76, of arteriosclerotic heart disease and hepatitis.

Hoag, Myrtle Anna ⊕ Buffalo; University of Buffalo School of Medicine, 1899; an associate member of the American Medical Association; died May 20, aged 87, of arteriosclerotic heart disease.

Hunt, Elbert C. ⊕ Conway, Ark. (licensed in Arkansas in 1903); died in the Conway Memorial Hospital May 1, aged 92, of uremia.

Johnson, George Monroe ⊕ Oberlin, Ohio; Rush Medical College, Chicago, 1901; veteran of the Spanish-American War and World War I; while practicing in Marshalltown, Iowa, served for nine years on the school board, of which he was president for five years; served on the staffs of St. Thomas Mercy Hospital and Evangelical Deaconess Home and Hospital, and served as president of the Y. M. C. A.; died in the Allen Memorial Hospital May 16, aged 79, of arteriosclerotic heart disease.

Kendall, Randall Palmer Jr. ⊕ Columbus, Ga.; Emory University School of Medicine, Atlanta, 1952; interned at the Columbus City Hospital; during World War II served as a pharmacist's mate in the Coast Guard; on the staffs of the Cobb Memorial Hospital and the City Hospital, where he died May 7, aged 39, of coronary thrombosis.

Kirkegaard, Smith Christian ⊕ Estherville, Iowa; University of Nebraska College of Medicine, Omaha, 1926; county coroner; on the staff of the Holy Family Hospital; died April 16, aged 65, of coronary thrombosis.

Kline, Bernard ⊕ Bridgeville, Pa.; L.R.C.P. of Edinburgh, and L.R.C.S., Edinburgh, Scotland, 1933; interned at the Passavant Hospital in Pittsburgh; specialist certified by the American Board of Psychiatry and Neurology; served during World War II; formerly on the staff of the Florida State Hospital in Chattahoochee, Fla.; member of the medical staff of Mayview (Pa.) State Hospital for six years and was assistant superintendent since last January; died in the Veterans Administration Hospital in Pittsburgh May 19, aged 46, of leukemia.

Kohlstaedt, George William ⊕ Indianapolis; Indiana University School of Medicine, Indianapolis, 1912; served during World War I; past-president of the city board of health; died in the Methodist Hospital May 17, aged 65, of pulmonary embolus and Hodgkin's disease.

Kollar, Joseph Blaine ⊕ Vero Beach, Fla.; Western Reserve University Medical Department, Cleveland, 1910; past-president and formerly a member of the state board of medical examiners; at one time practiced in Cleveland; died April 8, aged 71, of arteriosclerosis and heart disease.

Krakowski, Adam Joseph ⊕ Staten Island, N. Y.; Uniwersytet Jagielloński Wydzial Lekarski, Kracow, Poland, 1948; resident physician on the staff of the Richmond Memorial Hospital; died May 12, aged 40, of perforated duodenal ulcer.

McMahan, Alvin Mann, Duncan, Okla.; Tulane University of Louisiana School of Medicine, New Orleans, 1914; past-president of the Stephens County Medical Society; served during World War I; died in the Lindley Hospital May 30, aged 67, of cancer.

Maloney, Frank George Hiram ⊕ Madison, Wis.; University of Toronto Faculty of Medicine, Toronto, Canada, 1924; fellow of the American College of Surgeons and the International College of Surgeons; past-president of the Upper Peninsula Medical Society; on the staff of the Madison General Hospital, where he died May 15, aged 55, of myocardial infarction and coronary atherosclerosis.

Mazzoli, Albert Frederick ⊕ North Conway, N. H.; Laval University Faculty of Medicine, Quebec, Canada, 1932; local health officer; on the staff of the Memorial Hospital, where he died May 10, aged 53, of acute anterior myocardial infarction.

Miller, Edwin B. ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1897; an associate member of the American Medical Association; specialist certified by the American Board of Ophthalmology; served on the faculty of Temple University School of Medicine and the Graduate School of Medicine, University of Pennsylvania; formerly on the staffs of the Wills Eye Hospital and the Stetson Hospital, where he was chief of the eye service; died June 2, aged 83, of strangulated hernia.

Pelletier, Alfred George ⊕ Winchendon, Mass.; Laval University Faculty of Medicine, Quebec, Canada, 1898; died June 1, aged 79, of myocardial infarction.

Propst, Kenneth Edward ⊕ Green Lane, Pa.; Temple University School of Medicine, Philadelphia, 1931; president of the four Upper Perkiomen Joint School Boards; served during World War II; on the staff of the Grand View Hospital in Sellersville and the Montgomery Hospital in Norristown, where he served an internship and where he died May 4, aged 48, of coronary occlusion.

Reid, Charles Thomas ⊕ Joplin, Mo.; St. Louis University School of Medicine, 1906; veteran of the Spanish-American War; on the staffs of St. John's Hospital and the Freeman Hospital, where he died June 4, aged 80, of cerebral hemorrhage and bronchopneumonia.

Sanzone, Anthony, Brooklyn, N. Y.; Regia Università degli Studi di Roma. facoltà di Medicina e Chirurgia, Italy, 1936; member of the Medical Society of the State of New York; on the staff of St. Mary's Hospital; died June 15, aged 44, of acute myocardial infarction.

Schiffmann, Samuel, Newark, N. J.; University of Vermont College of Medicine, Burlington, 1901; member of the Medical Society of New Jersey; for many years clinic physician for the city health department; died May 30, aged 77.

Sexton, Charles Enoch ⊕ Oklahoma City; Medical College of Indiana, Indianapolis, 1898; served during World War I; died in the Veterans Administration Hospital, Wadsworth, Kan., June 4, aged 82, of coronary sclerosis.

Shambaugh, Noel Franklin ⊕ Long Beach, Calif.; University of Michigan Medical School, Ann Arbor, 1922; formerly clinical professor of medicine at University of Southern California School of Medicine in Los Angeles and on the faculty of his alma mater; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; attending physician at Los Angeles County Hospital; on the staffs of St. Mary's Long Beach Hospital and Long Beach Communit Hospital; died May 30, aged 58.

Shepard, Hiland George, Rochester, N. Y.; New York Homeopathic Medical College and Hospital, New York City, 1898; fo many years associated with the Genesee Hospital, where he wa an honorary staff member at the time of his death in the Moun Park Hospital, St. Petersburg, Fla., May 15, aged 83, of loba pneumonia.

Shouse, Edwin ⊕ Lawson, Mo.; University Medical College o Kansas City, 1899; on the staff of the Excelsior Springs (Mo Hospital and Sanitarium, where he died May 5, aged 79, o coronary occlusion.

Slavin, James Sylvester ⊕ Point Lookout, N. Y.; New Yor University Medical College, New York City, 1897; an associat member of the American Medical Association; died in Hem stead April 28, aged 83, of arteriosclerotic heart disease an diabetes mellitus.

Spira, Joseph ⊕ New York City; University and Bellevue Ho pital Medical College, New York City, 1913; died May 16, age 67, of cerebral hemorrhage.

Speegle, Andrew Arthur ⊕ Amarillo, Texas; Chicago College Medicine and Surgery, 1913; served during World War I; assoc ated with the Veterans Administration Hospital, where he di April 3, aged 65, of carcinoma of the pancreas, liver, lungs, a chest wall.

Weidlein, Ivan Ford ⊕ Cleveland; State University of Io College of Medicine, Iowa City, 1922; specialist certified by t American Board of Otolaryngology; member of the Americ Academy of Ophthalmology and Otolaryngology; on the st of the Doctors Hospital in Cleveland Heights and the Lakesi Hospital; died June 18, aged 57.

DIED WHILE IN MILITARY SERVICE

Robbin, Nathan Levy ⊕ Captain, U. S. Navy, Palo Alto, Calif.; born in Russia April 20, 1897; University of Illinois College of Medicine, Chicago, 1931; engaged in the private practice of medicine in Chicago from 1931 to 1942, when he was appointed a lieutenant commander, Medical Corps of the U. S. Naval Reserve; called to active duty April 9, 1942; promoted to captain, Medical Corps, U. S. Naval Reserve, in November, 1945; released from active duty Aug. 9, 1946; appointed a temporary captain in the Medical Corps of the U. S. Navy Oct. 11, 1946, and recalled to active duty; appointed a permanent commander in the Medical Corps of the U. S. Navy to rank from Nov. 1, 1945; promoted to permanent captain, Medical Corps, U. S. Navy, to rank from May 1, 1948; during World War I served in the Illinois National Guard; during more than 13 years' active duty in the medical department of the Navy, served in the Naval hospitals at San Diego and Shoemaker, Calif., Bainbridge, Md., Guam, Mariana Is., and Quantico, Va., with Naval Base Hospital no. 10 in Australia during World War II, and in the Naval Dispensary, San Francisco, where he was chief of the outpatient service and the eye, ear, nose, and throat department; died in the Naval Hospital, Oakland, May 24, aged 58, of acute pulmonary edema and myocardial infarction.

FOREIGN LETTERS

ARGENTINA

Census of Physicians.—The number of physicians in Argentina in December, 1954, was 22,762 for a population of 18 million, or one physician for each 800 inhabitants in the whole country and one for each 335 in the city of Buenos Aires. The present increase in the number of students is due to lack of selection, no restrictions in number, and the elimination of university fees. Medical schools are overcrowded, having inadequate space, equipment, and funds for teaching medicine according to approved modern standards. In 1953, the official number of students accepted in the first year by the six medical schools of the whole country was 7,054. In the medical school of Buenos Aires, 4,104 were accepted. It is predicted that in 1958 there will be 32,000 physicians, or about one physician for each 600 persons, according to V. E. de Pablo (*La semana médica,* May 12, 1955).

Death of Dr. Orías.—Dr. Oscar Orías, a leading physiologist, died suddenly on June 4, at the age of 49 years. He had studied with Professors B. A. Houssay of Buenos Aires, Carl J. Wiggers of Cleveland, and W. B. Cannon of Boston. On his return to Argentina, he organized a laboratory for research in cardiac physiology in the Medical School of Buenos Aires. He was named professor of physiology of the Medical School of the University of Córdoba in 1935. His published works include 'Recording and Interpretation of Cardiac Activity" (1939, in Spanish) and in collaboration with E. Braun-Menendez "Heart Sounds in Normal and Pathological Conditions" (1937, in Spanish, and 1939, in English). He also wrote the section on circulation in the textbook "Human Physiology" by Houssay, Lewis, Braun-Menendez, Hug, Foglia, and Leloir.

In 1950 he published "Cytology of Human Vagina" in collaboration with Ines L. C. de Allende. In 1943, Dr. Orías was dismissed from his chair because he signed a manifesto asking for effective democracy and American solidarity. He worked in the Instituto de Biología y Medicina Experimental during 1944 and 1945 but, when the University of Córdoba obtained its autonomy for a short time, he was called back by the Medical School only to resign in 1946. In 1947 he became the director of the Instituto de Investigación Médica-Mercedes y Martín Ferreyra in Córdoba, which was built by the Ferreyra family and was supported by private funds. Most of the equipment was given by the Rockefeller Foundation. From November, 1948, to November, 1949, he was visiting professor in the Long Island College of Medicine in Brooklyn, N. Y.

AUSTRIA

Pathology of Poliomyelitis.—At the meeting of the Society of Physicians in Vienna on April 1, Dr. Chiari reported on anatomic findings in 15 patients who died of poliomyelitis. These fatal cases included three adults, the oldest being 29 years of age. Despite a duration of the disease of only a few days, the changes observed in these fatal cases were most severe and involved not only the spinal cord and the medulla oblongata but also many portions of the brain, although the latter changes were far less severe. There were changes in the pons, thalamus, and cerebellum. In the latter organ, changes were observed not only in the area of the roof-nuclei of the vermis cerebelli but also in the molecular layer of its cortex. One is therefore justified in stressing the marked involvement of the brain as a characteristic feature in all these cases. In view of the route of infection, the changes in the follicles in the mesenteric lymph nodes were noteworthy. These consisted of karyorrhexis, proliferation of reticular cells, and deposits of acidophilic homogeneous masses in the centers of function. The microscopic aspect of the tissues was that of a severe disease of the spinal cord associated with extensive involvement of the more cephalad portions of the central nervous system.

Orthopedic Treatment of Poliomyelitis.—At the same meeting Dr. Erlacher stated that the main purpose of orthopedic treatment after the acute stage of poliomyelitis is the stabilization of the lower extremity by obtaining active cooperation as early as possible and encouraging walking with the aid of simple, lightweight splints. Contractures particularly of the knee and the hip must be prevented. With correct shifting of the axis of the knee behind and of the axis of the hip in front of the axis of gravity, an even completely paralyzed leg can be made stable again. Besides the use of mechanical devices, operation on joints and muscles may be indicated. Joints that no longer can be controlled should be put out of action by arthrodesis, but the functional deficiency is the more important the nearer the joint is located to the trunk. The speaker never performs arthrodeses of the hip, and rarely performs those of the knee, but arthrodesis of the foot is carried out frequently. Although arthrodesis destroys motion, arthrodesis of the shoulder may be associated with increased function in the presence of complete paralysis of the deltoid, because the function of the useless arm is largely restored by the muscles of the shoulder girdle. In suitable cases the movements of the joint may be stopped in only one direction by an arthroereisis. Transplantations of the tendons permit the use of active muscles for a certain function by eliminating unimportant motions. With the right indications and technique, a number of useful plastic operations on tendons, such as transplantation of the anterior tibialis muscle to the cuboid bone in patients with talipes due to paralysis, transplantation of the peroneous brevis muscle to the scaphoid bone in patients with flatfoot, and translocation of the peroneus longus muscle to the inner side of the heel in patients with talipes calcaneus are available. In a patient with a completely paralyzed foot, a division of the tendo achillis may still provide a useful stabilization of the foot.

Artificial Respiration in Acute Poliomyelitis.—At the same meeting Dr. G. Hofmann stated that problems of artificial respiration can be understood only in terms of the normal physiology of respiration and the factors responsible for circulatory shock. Early hospitalization is imperative and cooperation between various specialists, including the anesthetist, is essential. Early tracheotomy proved to be useful. High pressure respiration is necessary in patients with bulbar paralysis. The indication for treatment in the iron lung is therefore limited to patients with incomplete respiratory paralysis. Keeping the air passages free and prompt treatment of any disturbance of the respiratory mechanism are essential.

Poliomyelitis in Adults.—In the poliomyelitis epidemic of 1954 in Vienna 124 children and 61 adults were affected by the disease, a relatively high ratio of adults. The case fatality rate was higher among adults than among children. The peak point of the epidemic was in October. The peak of the epidemic usually occurs between Aug. 15 and Aug. 30. The clinical course of the disease showed a relatively high number of patients with acute ascending spinal paralysis. Encephalitic forms were observed particularly in the last phase of the epidemic. This epidemic may have been caused by various viruses.

New Group of Anticholinesterases.—At the meeting of the Society of Physicians of Vienna Feb. 25 Drs. Kraupp and Stumpf said that, as regards their chemical structures, the polymethylene-bis-carbaminoyl-trimethlammonium phenols are derived from the neostigmine molecule, in that, in the individual homologous compounds, two neostigmine molecules each are

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[*] The items in these letters are contributed by regular correspondents in the various foreign countries.

attached to the carbamic acid nitrogen by polymethylene chains of various lengths (4 to 10 methylene groups). The pharmacological characteristics of the new class of substances are qualitatively identical with those of neostigmine, but they are much more active than neostigmine, and the duration of their action is greatly prolonged. The compounds BC 47 and BC 48, which are the most potent of this group, and in which the two neostigmine molecules are combined by 8 and 10 methylene groups, respectively, have 10 to 100 times the acetyl cholinesterase (true cholinesterase) inhibiting power of neostigmine. The stability of the enzyme inhibiting complex is also much greater, particularly in the dibasic compounds. This presumably explains the prolonged action in vivo. For instance, it could be demonstrated on rats that a single intravenous injection of 12.5 mg. of BC 48 per kilogram of body weight gave partial protection against tubocurarine chloride for a week, whereas after the same dose of neostigmine this protection lasts only two hours.

Dr. K. Pateisky gave the anticholinesterase, BC 40 (hexamethylene-bis-N-methylcarbaminoyl-m-trimethylammonium phenole), to 11 patients with myasthenia gravis and 10 normal controls. The undesirable secondary effects that result from large doses can be counteracted by atropine. The optimal intramuscular dose varies from 0.3 to 0.5 mg. in combination with 0.5 mg. of atropine. With this dosage there are no unpleasant secondary effects. The antimyasthenic effect begins 20 minutes after the injection and reaches a maximum after six hours. It retains its full effect (that is, no neostigmine is required) for 26 hours; and then a reduced dosage of neostigmine will suffice for an additional three days after the injection. When the optimal dose is administered the treatment is given at four-day intervals. With this form of treatment, the patients feel well, their appetite increases, and they gain weight. Thus BC 40 is an effective remedy for the symptomatic treatment of myasthenia gravis, and it is superior to other anticholinesterases by virtue of its potency, prolonged action, and mild side-effects.

Phlebographic Visualization of Pelvic Veins.—At the meeting of the Society of Physicians in Vienna on April 15, Dr. R. Gottlob stated that injection into the trochanter major through the spongy substance has proved to be the most effective method for the visualization of the pelvic veins. Puncture of the bone is done with an elongated needle or with a smooth, 8 cm. long bone needle. Since the time required for the passing of the contrast medium may vary with the rapidity of the blood stream, repeated use of serial exposures has been recommended for obtaining diagnostically useful pictures. Since serial angiography has various disadvantages, a small amount of ether was injected into the bone preceding the injection of the contrast medium, and the circulation time from the leg to the lung was determined. The distance that is ascertained with the aid of the circulation time is much longer than the distance that should be ascertained phlebographically. This incongruence however may be compensated for by the fact that ether is transported much faster by the blood stream than is the contrast medium. In 40 subjects it proved advantageous to wait with the exposure to light of the pelvis for as many seconds after the start of the injection of the contrast medium as the previously measured ether-time amounted to. The rapidity of the injection of the contrast medium should also be adjusted to the circulation time.

Thromboses of Pelvic Veins.—At the same meeting Dr. R. May stated that the primary indication for roentgenologic visualization of the pelvic veins is a pelvic thrombosis that has run its course. Lesions of mild degree (damage to the lateral wall and formation of collateral vessels) were treated with continued phenol blockade of the sympathetic nerve. Narrowing of the external and the common iliac veins, respectively, shown by the roentgenogram, frequently can be traced back to external compression, to a cicatricial-sclerotic transformation of the common vascular sheath. In cases of this type, hulling of the vein according to Wanke's technique is recommended. In severe cases, the main vessel has become completely obliterated and has been compensated for by anastomosis at a near point or by anastomosis with the pudendal and gluteal veins. In cases of this type some improvement still may be obtained with high sympathectomy. The most severe degree of damage is the obliteration of the distal portion of the vena cava. The severity of the clinical aspect (venous claudication and incapacity to stand erect for a long time) may be explained with the deficient compensation for the vena cava by superficial anastomosis at the abdominal wall and of the ascending lumbar veins that run along the vertebral column. The value of any operation is limited in patients of this type.

Myoglobinemia and Myoglobinuria.—At the meeting of the Society of Internal Medicine of Vienna on March 24 Kiss and Reinhart reported a study of the serum and urine of 40 patients (in whom myocardial infarction was found clinically and by electrocardiography) for myoglobin. In all but two patients, in whom the results were doubtful, the presence of myoglobin could be established in the serum as well as in the urine. The highest values were observed in the first few days after the infarction, but at the end of 14 to 16 days myoglobin was rarely found in the urine and serum. It appears that myoglobin excretion persists longest in patients in whom clinical symptoms and electrocardiographic records indicate relatively large infarcts. There is no parallelism between the excretion of myoglobin and either leukocytosis or leukopenia. The myoglobin excretion can be regarded as a direct sign of the infarction in contradistinction to the other laboratory changes after cardiac infarction, which can be regarded as nonspecific general reactions of the body indicating a general change in the sympathetic nervous system.

Acetazolamide.—Dr. F. Kaindl and his co-workers used acetazolamide for patients in the edematous stage of cardiac decompensation. Studies were made on 19 patients with regard to the diuretic effect and electrolytic changes in the urine. In about two-thirds of these patients oral administration of the drug produced a good diuretic effect, that is, the elimination of fluid was at least twice as much as in the periods preceding its administration. One tablet of acetazolamide is given on each of the firs three days, and then medication is interrupted for three days After this interval, the same dosage can be repeated. The continued administraton of the drug is ineffective, as the diuretic effect does not persist beyond the fourth day. There is also danger of acidosis with continued treatment.

Influence of Pyridoxine on Residual Nitrogen in the Blood.—At the same meeting Dr. S. Schmid reported that in a limited number of patients with renal insufficiency lowering of the level of the residual nitrogen was obtained temporarily by parenteral administration of pyridoxine. In single cases a prolonged drop in residual nitrogen was associated with simultaneous improvement of the patient's general condition. The effect of pyridoxin exhausted itself in the course of the disease. Animal experiments and reports in the literature suggest that the tubula apparatus of the kidney probably presents the point of attach by the vitamin. The mechanism of this action is unknown.

Blood Groups.—At the meeting of the Society of Physicians of Vienna on April 29 Dr. P. Speiser stated that, due to the complexity of blood groups and blood factors, a mother-child incompatibility of 87% can be expected. Although the possibility of the immunization of a mother by her fetus is great, such immunizations are nevertheless relatively rare. In law suits concerning paternity the use of hereditary factors permits the exclusion of paternity in about 63% of the cases. This percentage could be increased to 71 if such serum factors as anti-s, anti Fy^b, and anti-k (Cellano) were also considered.

Intratracheal Goiter.—At the same meeting, Dr. O. Novotny reported on a 38-year-old woman who had been subjected to tracheotomy 11 years earlier because of rapidly increasing dyspnea after thyroidectomy. She had been wearing a cannula ever since. An endotracheal goiter the size of a cherry was found, and it was removed by thermocautery. Since then the subglottic space remained free, and it was possible to remove the cannula.

Xanthomatosis of Skin.—At the meeting of the Society of Phyicians in Vienna on March 11, Dr. A. Matras reported on a woman, aged 62, who in 1949 underwent extirpation of the adnexa uteri for torsion of the pedicle of a tubo-ovarial cyst. Since 1948 she had had gallstones and a papular eruption on he lower extremities. In May, 1952, she was admitted to the hospital with generalized xanthomatosis. Since November, 1952, she had been under constant dermatological observation, because of multiple, firm, yellow, cutaneous nodules the size of a small cherry or smaller on the external surface of the arms and symmetrically on both elbows and knees. A dense crop of light yellow nodules the size of lentils was present on the buttocks and on the posterior surfaces of both thighs; there was areolar aggregation of the nodules in the gluteal region. Xanthelasma was clearly visible on the upper and lower eyelids. Examination showed elongation and diffuse dilatation of the aorta. Roentgenograms of the gallbladder revealed it to be the size of a goose egg with many niches caused by stones. Microscopic examination of the nodules revealed the typical aspect of xanthoma with many grindstone-like anisotropic crystals in the xanthomatous tissue. The serum cholesterol level, about 320 mg. per 100 cc. in 1952, showed variations up to 850 mg. per 100 cc. despite a rigid diet. Therapeutic trials with insulin and cortisone brought no improvement. In the course of treatment with heparin in 1954, constant cholesterol levels of about 450 mg. per 100 cc. were observed and the xanthomatous cutaneous manifestations receded. Intravenous infusions with 200 mg. of heparin in 500 cc. of isotonic sodium chloride solution were given for 18 days and resulted in a decrease of the cholesterol level from 750 to 423 mg. per 100 cc. and of the total lipids from 2.77 to 0.62 gm. per 100 cc.

COLOMBIA

Middle Lobe Syndrome.—Dr. C. Gómez Hurtado in *Unidia* (2:823-838 [Nov.-Dec.] 1954) reported the results of roentgenographic and bronchoscopic studies of the middle lobe syndrome, which is characterized by irreversible chronic obstructive atelectasis of the pulmonary lobar parenchyma frequently associated with a pneumonitis that may or may not be suppurative. The syndrome is caused by an early or late reaction of the bronchial lymph nodes to primary tuberculosis. Active tuberculosis and benign or malignant neoplasms have been excluded as causal factors. The authors reviewed the clinical histories of 649 patients with nontuberculous pneumonopathies. Opacities were observed in the middle lobe in 65 patients, in the lingula pulmonis in 2, and in the anterior segment of the right upper lobe in one. Thirty-nine of these 68 patients had irreversible atelectasis due to bronchostenosis, which was caused by bronchogenic carcinoma in only one. A diagnosis of middle lobe syndrome from a late reaction to primary tuberculosis with bronchial stenosis was made in the remaining 29 patients. During bronchoscopy six patients showed either anthracotic spots or rests of characteristic anthracotic fistulas suggesting the characteristic phase of anthracosis. In one of the patients the microscopic examination of the operative specimen confirmed the diagnosis.

The syndrome showed the following characteristics in the 29 patients: opacity from irreversible retraction of the middle lobe (except for one in the anterior segment of the upper lobe); frequent catarrh with cough and purulent, mucopurulent, or sanguineous expectoration; fair general health; sputum negative for tubercle bacilli, including examination of material obtained by lavage or bronchial aspiration; negative results of cytological examination for neoplastic cells; and negative results of repeated bronchoscopic examination for direct or indirect signs of bronchial neoplasms. In one patient the results of two consecutive endoscopies suggested carcinoma. The diagnosis was not confirmed at the operation or by microscopic examination of the operative specimen. The disease followed a benign course. The patients were observed for several years. The results of endoscopic examinations verified the diagnosis. The main findings were signs of peribronchial compression that may or may not be associated with chronic edema of the mucosa, total or partial obstruction due to compression, and preservation of the bronchial mobility (except in two patients who were very old). Bronchial suppuration, mucosal hypersecretion, or normal secretions were observed in the various patients. The author found a causal factor not previously reported. In six patients the disease was caused by anthracotic lymph nodes with the characteristic pigmentation of the bronchial mucosa at the point of compression or in nearby areas.

Epidemic of Equine Encephalomyelitis.—Drs. C. Sanmartin-Barberi and his co-workers in the *American Journal of Tropical Medicine and Hygiene* (3:283-294, 1954) report an investigation of an outbreak of disease in human beings characterized by a short, mild, febrile course in Espinal, Colombia. A virus, isolated from two of the patients, was identified as a strain of the virus of Venezuelan equine encephalomyelitis. Furthermore, in 10 other serums from persons bled several weeks after the clinical attack, high titers of neutralizing antibodies against these strains of the virus were demonstrated. The epizootic form of equine encephalomyelitis has been previously reported in Espinal, and the authors conclude that the equine encephalomyelitis virus is capable of causing human epidemics under natural conditions.

Rehabilitation Center.—A rehabilitation center for war veterans is proposed for the new Central Military Hospital. The board of directors of the Committee on Military Hygiene and the Central Military Hospital have invited Drs. Howard A. Rusk, Eugene J. Taylor, and Thomas Canty, all of the United States, to visit Colombia and assist in organizing the center.

New Hospital Opened.—The five-story, 650-bed Hospital Infantil of Bogotá was opened on May 13. It was built and equipped by the government with the collaboration of national philanthropists. This is the first hospital in Colombia that has been accredited by the American Hospital Association.

ENGLAND

Medical Use of Hypnosis.—A committee of the British Medical Association was appointed in November, 1953, to consider the uses of hypnosis in medical practice. After 18 months the committee reports that hypnosis is of value in the treatment of some patients and may be the treatment of choice in some who have psychosomatic disorders and psychoneurosis. It may also be of help in revealing unrecognized motives and conflicts in such conditions. As a method of treatment it has proved its ability to remove symptoms and to alter morbid habits of thought and behavior. It is therefore a proper subject for medical research. Like other remedies, hypnosis has its indications and limitations. Some enthusiastic supporters of its use fail to enumerate the contraindications and give the impression that it constitutes an approach replacing other forms of psychiatric treatment. This view is mistaken. Much knowledge and expert judgment are required to decide when hypnosis is likely to help the patient and whether it should be used alone or as a supplement to other methods of psychotherapy. For these reasons hypnosis should not be regarded as a specialty independent of psychological medicine.

In addition to the treatment of psychiatric disabilities there is a place for hypnosis in the production of anesthesia or analgesia for surgical and dental operations, and in suitable subjects it is an effective method of alleviating the pain of childbirth without interfering with the normal course of labor. It has been claimed that the shock of operative procedures can be mitigated when these are carried out under deep hypnosis, but the committee is not convinced of the validity of this claim and considers that further research on this is desirable. Hypnosis has its dangers, especially when used without proper consideration on persons predisposed, constitutionally or by the effects of disease, to severe psychoneurotic reactions or antisocial behavior. The possibility of committing crime under hypnosis cannot be ruled out. Hypnosis can result in the development of a relationship between hypnotist and subject of the same order and intensity that is often produced more slowly in the course of psychotherapy. The trained hypnotist is aware of this, but if hypnosis is applied without this knowledge and experience there is no control over the powerful emotions that may be released and much harm can be done if the technique is used by unskilled persons or in unsuitable patients. It is therefore recommended that the use of hypnosis should be confined to persons subscribing to the recognized ethical code governing the relation of physician and patient. This would not preclude its use by a suitably trained psychologist or a medical auxiliary working under the guidance of a physician. The committee recommends that medical students should be informed of the practice and therapeutic possibilities of hypnosis and that instruction in its clinical use should be given to all trainees in psychological medicine. Trainee anesthetists and obstetricians might also receive instruction. As it can achieve good results in certain patients and since its nature and mode of action are speculative, it constitutes a challenge to medical science. The main fields worthy of investigation are: (1) continuation of neurophysiological and psychological observations on hypnotism induced under controlled conditions; (2) controlled observations of its therapeutic effects in functional nervous disorders; (3) investigation of somatic disorders in the cause of which psychological factors are thought to play a major part; and (4) research into the general problem of the physician-patient relationship. Because of the relative brevity of treatment with hypnosis, such research may contribute to a solution of the problem created by the large number of people requiring psychotherapy. Since research of this kind requires the coordination of laboratory, clinical, and other studies, it might be best organized through the universities and research foundations.

Diseases from Pets.—At a meeting of the comparative medicine section of the Royal Society of Medicine in April, Professor Bedson stated that there was a group of psittacosis viruses with similar morphological and staining characteristics that both domestic and wild birds harbor. An outbreak of atypical pneumonia in the Faroe Islands was due to a psittacosis virus coming from fulmar petrels, and many human infections originating in pigeons, turkeys, ducks, chickens, pheasants, and other birds have been recorded. Cats, sheep, cattle, and laboratory mice are hosts of related viruses. There is no reliable evidence that these mammalian viruses produce infections in man, but all avian strains are capable of doing so, although psittacine birds are of more importance as carriers than nonpsittacine ones. Birds harboring the virus are usually imported ones suffering from acute disease. They excrete more virus than healthy birds. The strains of virus from psittacine birds are more virulent to man than are the ornithotic strains. Laboratory infections often occur and many patients infected in this way give no history of contact with an infected bird. The spread of infection from birds is airborne in the form of dried excreta. Attempts have been made to control the importation of parrots, but realization that nonpsittacine birds also harbor the virus has resulted in the ban being lifted in some other countries. The ban was reimposed after there was a sharp increase in the incidence of psittacosis.

Dr. A. Buxton discussed the incidence of salmonellosis among pets. Domestic dogs and cats have an infection rate of 1.5%. It may be as high as 18% in animals kept in kennels because of infected food; 26 of 98 samples of a proprietary dog food were infected with Salmonella organisms. Salmonellosis from infected pets is more readily passed on to children because they handle and fondle them more than adults do. In Britain the most prevalent type is Salmonella typhimurium. Dogs may carry several types without showing symptoms. Pigeons and even tortoises may be infected.

Mr. G. C. Brander, a veterinarian, said that insecticides and fungicides had done much to reduce parasitic and fungous infection. It is easy to treat the human being and overlook the source of infection. Immunity to parasites increases with age, but host resistance may be lowered by other infections. Parasitic infections are likely to become eczematous, and irritation might remain after the parasite has been eradicated. Lesions due to fungi in animals are often difficult to detect and tend to be deep in the hair follicle. With the exception of fungous and leptospiral infections, human infection from pets and other domestic animals is not frequent.

Resistance to Infection.—Prof. René Dubos, Rockefeller Institute, New York, guest speaker at a meeting of the Royal Society of Medicine in April, described experiments that could increase the susceptibility of mice to infection with Mycobacterium tuberculosis and Micrococcus (Staphylococcus), Salmonella, Klebsiella, and other organisms. Expectation of life is diminished when the animals are exposed to various stresses before inoculation, such as the administration of thyroxin, dinitrophenol, sodium citrate, and alpha-keto-glutarate or by deprivation of food for 36 to 48 hours. The results of starvation cannot be explained only by deprivation of calories, because low-caloric diets do not decrease the animals' resistance, nor does simple loss of weight produce the effect, for mice fed on low-protein diets are underweight but they are normally resistant to infection. The most effective way of lowering resistance is to starve the animal for 48 hours before inoculation. If mice are fed synthetic diets containing animo acids in place of protein, their susceptibility to infection is increased tenfold, but, if whole protein is added, normal resistance is restored, although not all proteins are equally effective in this respect. The results of these experiments may be explained either by increased susceptibility of the animals to the bacterial toxins or by more rapid and extensive bacterial growth. Altered tissue metabolism enhances susceptibility to infection. After fasting, mice are more sensitive to endotoxins from gram-negative organisms and to the recently isolated tuberculosis toxin.

Bacteria were injected intravenously in mice and later estimated quantitatively in various organs. One group had the standard Sherman diet, and the other was given a diet low in protein and starved for 48 hours beforehand. Ten hours later the first group had sterile blood and only a few organisms in the spleen and liver, while in the second group organisms were found in the blood and counts up to 50,000 were found in the liver and spleen. Other forms of stress, such as increased carbohydrate intake or administration of thyroxin, produced similar results. Mice are more susceptible to infection if the Krebs cycle is poisoned. Susceptibility to infection is increased by procedures resulting in at least three metabolic disorders—depletion of intracellular glycogen, reduction in the glycolytic activity of inflammatory cells, or increase in the tissue levels of certain polycarboxylic acids. These effects lead to impaired clearing power of the reticuloendothelial system, decrease in bactericidal power of the tissues, and decrease in resistance to bacterial toxins. Susceptibility to infection may change rapidly and reversibly, independent of the immunologic state, by physiological stresses. The findings in mice also suggest that the sugar-vitamin-amino acid mixtures so commonly given to patients in emergency situations may not be the best for restoring resistance.

Prof. A. Miles, director of the Lister Institute, said that the local reaction to the subcutaneous inoculation of organisms could be abolished by injecting epinephrine within four hours of bacterial inoculation. The early vascular reactions inhibited by the epinephrine are responsible for a 99% to 99.9% kill of the injected bacteria, according to the species of pathogen used. In allergic animals, though delayed allergy promotes infection with Myco. tuberculosis, the early exudation resulting from the anaphylactic element of tuberculin allergy might have survival value for the animal.

Dr. D. Long, National Institute for Medical Research, Mill Hill, said that bacterial infection was a cause of stress, which produced hormonal changes in rats and adrenocortical stimulation in man. The guinea pig responds to stress like man, can be sensitized to tuberculin, and produces antitoxin resembling that produced in man. Thyroxin-treated guinea pigs are more sensitive to intradermally injected tuberculin and produce more diphtheria antitoxin than controls. Insulin increases sensitivity to tuberculin. This may be related inversely to blood sugar levels; partial pancreatectomy prevents the increased response seen after treatment with thyroxin, which therefore acts through the islands of Langerhans. Dr. Long concluded that immunity was probably due to the balance between insulin and cortisone.

Dr. G. Meynell, Postgraduate Medical School, showed that if the gastrointestinal flora in mice was modified by the administration of streptomycin, their resistance to an oral dose of Salmonella typhimurium was decreased, and the organisms given by mouth could be recovered from the large intestine.

Physicians and Radio Performances.—Prof. L. J. Witts strongly objects to the insistence of the Central Ethical Committee of the British Medical Association on the anonymity of physicians appearing professionally in radio or television performances (*Brit. M. J.* [supp.] 1:263, 1955). He says that the committee misrepresents the conditions and purposes of radio. Scripts are carefully censored so that no self-advertisement is possible; physicians are invited to appear on the radio for education of the public and not for personal advertisement. Most physicians work within the framework of the National Health Service or other public services, and it is therefore essential that the public should be well informed about health and disease. Two important channels of education are radio and television and, if the physician appears on either of these, he must make personal contact with his audience to be a success. It is difficult to do this unless his name and status are known to the audience. Professor Witts says that the general public is entitled to know these things. Nobody wants to listen to "a physician" or "a surgeon." He thinks that the name and description of a doctor appearing should be published in the same way as it is at the head of a professional medical article. People appear on radio and television because of "the fun of doing it" and to achieve success in these mediums. They cannot be successful while remaining anonymous. To get a good audience for a radio performance one must have good material and a good reputation. One cannot have a reputation if one is not known. If physicians appearing on radio and television are to attract an audience comparable with that attained by radio personalities, they will only do so by making themselves known through a number of interesting talks or discussions under their own names. Professor Witts says that he has often broadcasted under his own name but that he has never been requested as a consequence to see a patient. The accusation of gaining patients through undue or unfair publicity does not therefore arise. The ban seems to reflect a tendency to say that what everyone cannot have no one will have. Medical radio and telecast programs are managed better in the United States, where, since there are provisions to prevent improper use of radio or television for personal advertisement, radio appearances are encouraged by the American Medical Association.

Cause of Coronary Thrombosis.—At a meeting of the Royal Society of Medicine to discuss coronary artery disease, Prof. H. W. Fullerton of Aberdeen attributed coronary thrombosis to diet. He accepted the explanation of Prof. J. B. Duguid of Durham that narrowing of the coronary arteries was due to small thrombi in the vessels becoming covered with endothelium and then organizing to form a fibrous thickening in the intima (*Lancet* 1:525, 1955). Since most mural thrombi show some fatty change they give rise to that combination of fatty change and fibrosis that is characteristic of atherosclerosis. Fullerton reviewed the evidence that atheroma is associated with a high fat intake in the diet. The growth of income is associated in Britain and the United States with an increased intake of fat in the diet and also with an increased incidence of coronary thrombosis, which is regarded as secondary to atheroma. Two other observations showed a correlation between intake of fat and the incidence of coronary thrombosis. Keys in the United States noted that the mortality from degenerative heart disease was higher in countries whose inhabitants had a high fat intake in their diet; and mortality from cardiovascular diseases decreased in Norway in World War II, when the fat ration was very low. Fullerton found experimentally that reduced clotting time was associated with the lipemia that followed a fatty meal and that this increased blood coagulability was present only when the intake of fat was high. He suggested that one factor responsible for the intermittent deposition of fibrin on the arterial intima was the ingestion of meals containing much fat. There would be much individual variation in this and also a sex difference, if this explanation were correct. The lipemia following the ingestion of fat is certainly greater in elderly subjects and in those with coronary artery disease. Fibrinolysis might also be a factor in the cause of coronary disease.

Dr. J. N. Morris, director of the Social Medical Research Unit of the Medical Research Council, considered the epidemiology of coronary atheroma. Mortality rates showed a slowing in the fall of the death rate in middle-aged men in the last 30 years; this did not apply to the death rate in women. Duodenal ulcer, ischemic heart disease, and bronchial carcinoma were mainly responsible for this. Ischemic heart disease was the largest single factor. The inhabitants of large towns and physically inactive persons were the chief sufferers; farmers and agricultural workers were particularly free of the disease. An epidemiological study of the pathology of coronary atherosclerosis was needed, and Dr. Morris had appealed to pathologists all over the country for information. Analysis of pooled hospital records showed that the proportion of men with coronary atherosclerosis increased to as high as 20 to 25% by the age of 70; the proportion with stenosis of a main coronary artery was 30 to 35%. Those dying of hypertension had more coronary atherosclerosis than others. In a fifth of the deaths from ischemic heart disease coronary atherosclerosis was not observed. The effect of lack of exercise was most marked. For example, the incidence of coronary thrombosis was much greater in omnibus drivers than in conductors, who spent much time running up and down the stairs.

Future of Medical Research.—In an address given on May 18 at the opening of the metabolic research unit set up by the Birmingham Regional Hospital Board, Prof. L. J. Witts of Oxford University deprecated the stifling effect of socialized medicine on research. "Those of us who are engaged in medical education and research fear the treason of the clerks, who wish to have everything tidy and circumscribed and who forget that the oak sheds ten thousand acorns to produce another tree and the fish spawns a million eggs to maintain the race of fishes. Research requires a spirit, not of prodigality but of magnificence. . . . We are more likely to get it from local pride than central authority." The need for local initiative is greater than ever under the National Health Service, said Professor Witts, where the risk is that enthusiasm may be stifled and everything reduced to one dead level. Referring to the important part played by the patient in medical research, he quoted from Bernard Shaw's play, "The Doctor's Dilemma." "It's always the patient who has to take the chance when an experiment is necessary, and we can find out nothing without experiment." New diseases, physical and mental, have appeared with the strain of civilized life, the change in human nutrition, the hazards of industry and transport, and the aging of the population. The need for experiment is not likely to diminish. The cooperation and the consent of the patient for this must always be obtained. If only those things are done that can be explained and agreed to by an intelligent patient, clinical research as a whole will greatly gain. Clinical research is a joint enterprise undertaken together by physician, scientist, and patient. It is no longer possible to preserve medicine as a mystery now that the state is the major supporter of medical research.

Poliomyelitis Vaccine.—The Medical Research Council has announced that a limited amount of poliomyelitis vaccine of the type used by Dr. Salk will be available in Britain this year. There will only be sufficient vaccine for the inoculation of small groups of children in a few centers where there are facilities for studying the poliomyelitis virus. The response to vaccination will be studied serologically. The council believes that this is necessary for planning the most effective use of the larger quantities of vaccine that it is hoped will become available next year. At present the use of the vaccine must be restricted to centers selected for these trials. The situation has been complicated by the refusal of the Indian government to export monkeys to Great Britain. These are used in the preparation of the vaccine. This ban was imposed four months ago after 394 monkeys were accidentally suffocated at London Airport during transit from India. Antivivisection societies are urging the Indian government to keep the ban in force. If the vaccine is to be produced in any quantity, 1,000 monkeys a month are needed from India. There are now fewer than 50 left for this purpose after producing sufficient vaccine for the trials planned by the Medical Research Council this summer. India has almost a monopoly on monkeys for medical research purposes.

John Snow Centenary.—The section of epidemiology and preventive medicine of the Royal Society of Medicine celebrated the centennial of the publication of John Snow's classic, "On the Mode of Communication of Cholera." Bradford Hill, professor of medical statistics in the University of London, effectively debunked the traditional story of Snow stopping the epidemic by removing the handle from the Broad Street pump. Snow himself never claimed that this episode halted the epidemic. The removal of the pump handle was symbolic rather than effective. Snow's fame rested securely on his theory of the mode of spread of cholera, built up by reasoning based on innumerable careful observations made personally by "shoe-leather epidemiology" in the affected area. Professor James Mackintosh, of the University of London department of public health, whose paper was read in his absence, stressed the difficulties against which Snow had to contend. Surface pumps were allowed to remain in the affected areas long after Snow's death. Snow's views were attacked in the *Times* by the Private Enterprise Association, and *Lancet* accused Snow of riding a scientific hobbyhorse by insisting on the paramount dangers of sewers.

Risks from Atom Bomb Tests.—On March 10 the Prime Minister was asked to take the initiative in proposing the establishment of a United Nations Commission to study the dangers to human beings from radiation during atom bomb tests and to seek the limitation of the number of experiments and thus prevent injury to the human race through world-wide contamination of the atmosphere. The atomic and nuclear tests carried out so far have released about the same amount of radiation in regions well away from testing ground as would be liberated during radiography of the chest. The Federation of American Scientists has proposed an immediate United Nations study of the potential genetic risks of nuclear weapon tests. The increase in radioactivity of the atmosphere from these weapons is negligible, except in the immediate vicinity of the explosion. Dr. Barnet Stross, a medical Member of Parliament, asked what research was being conducted on the problem of the increasing radioactive content of the atmosphere of London and what evidence there was of an association between this increased radioactivity and bronchial neoplasms. The Lord President replied that there is no evidence of any increased radioactivity of London air in recent years, that any radioactivity present is due to natural causes, and that there is no evidence that radioactivity is a contributory cause of bronchial carcinoma, although further investigations are being pursued on this possibility.

Dentists' Pay.—Dentists in the National Health Service had a 10% pay cut in 1950 when it was discovered by the Ministry of Health that they were earning far more than had been estimated when salary scales were drawn up. On March 17, 1955, the Minister of Health notified the British Dental Association that the salary cut of 1950 would be abolished. On March 31 the remuneration committee of the Dental Association recommended rejecting the Minister's offer because it would mean abandoning the recommendations of the Spens Committee, which had been asked to arbitrate on the matter of dentists' salaries, and the association's claim, based on them, for a scale that would produce an average net salary of $6,160 a year. After further consideration the association decided not to accept the committee's recommendations but to advise acceptance of the Minister's offer, because of the danger of refusing something palpable and embarking on an interminable series of negotiations.

Niddah and Sterility.—According to Dr. Bernard Sandler of the fertility clinic at the Manchester Victoria Memorial Jewish Hospital, *niddah* (postmenstrual abstention from coitus) is an important cause of sterility (*Brit. M. J.* **1**:1339, 1955). He quotes the example of the woman with a short menstrual cycle (e. g., 23 days), who will ovulate on about the ninth postmenstrual day. If, as often happens, she menstruates for eight days and then observes seven days' abstinence, the first coitus will not be until the 15th postmenstrual day, when the ovum is presumably dead. Every year Dr. Sandler sees a number of such patients who, wishing to become pregnant, have been subjected to much useless treatment for what is a very simple condition, once the knowledge of *niddah* is kept in mind. He recommends the administration of estrogens or, in some patients, androgens at the onset of menstruation. This postpones ovulation and allows the woman to have intercourse when the ovum is still alive.

Physician Auctions His Good Will.—When the National Health Service was introduced in 1948, all general practitioners who entered that service were promised financial compensation on retirement for loss of the good will of their practices. A physician has now auctioned his $11,450 compensation in a London auction room for $9,100. Such a thing has never been done before. The medical practice compensation is payable to a general practitioner in the National Health Service on retirement or to his dependents on his death before then. It carries with it a yearly interest of 2¾%. The physician who auctioned his compensation is the senior partner of a thriving London suburban practice. The purchaser will receive $11,450 plus the interest from the Ministry of Health when the physician dies or retires. The auctioneer stated that since the auction he has had several inquiries from other physicians interested in selling their medical practice compensation.

Abolishing the Apothecary System.—The apothecary system of measurement is to be abandoned in the British Pharmacopoeia for 1963 and subsequent editions. In 1951 the Committee on Weights and Measures Legislation, appointed by the Board of Trade, recommended that the apothecary system of measurement should be abolished after five years and that the trades and professions at present using it should replace it with the metric system. In 1953 the executive committee of the General Medical Council informed the Board of Trade that it accepted the recommendation. The compilers of the British Pharmacopoeia are agreed that the apothecary system should be eliminated from the Pharmacopoeia but believe that it would be premature to make the change as early as 1958, when the next edition is due to be published.

Slimming Reduces Gas Consumption.—An unusual angle of the present enthusiasm for slimming is the decrease in the domestic use of gas. The traditional cooked breakfast is becoming a thing of the past in many households. Many persons, especially women, now take little more than fruit juice and toast for breakfast. Another factor is the move away from home cooking as a result of factory, canteen, and school meals. Many married women are attracted into industry who previously had their midday meal at home. In addition, with both husband and wife working, ready-cooked foods simplify shopping.

Frustration in Hospital Service.—A warning of serious deterioration in the standards of hospital service was given by the president of the Association of Hospital and Welfare Administrators at the annual conference of the association. Although hospital service has improved since it became nationalized on July 5, 1948, the same feeling of frustration is found in the service that appears to be common to any service as soon as it becomes nationalized. A feeling of "couldn't care less" or "not my responsibility" appears to be creeping in.

Doctor Fined.—The Norwich Executive Council has asked the Minister of Health to withhold $588 from the remuneration of a physician under contract with the National Health Service. He was said to have given prescription forms for free drugs to private patients not in the service. He also gave another physician who was not in the service 305 prescription forms, enabling the latter's private patients to obtain free medicines. He has the right to appeal against the recommendations of the executive council.

Damages for Rheumatoid Arthritis.—A Glasgow schoolteacher, aged 28, sued the city of Glasgow for $28,000, claiming that she had contracted rheumatoid arthritis through working in a damp, badly ventilated, and poorly heated room. The case was ied before a jury, which, by a majority of seven to five, found or the plaintiff and assessed the damages at $5,600 despite the act that Dr. Dudley Hart, a rheumatologist, testified that from he point of view of causing rheumatoid arthritis, coldness and ampness had no relevance. Dr. J. P. Currie, also a rheumaologist, gave similar testimony, in support of which he pointed ut that there was no increased incidence of the disease among efrigerator workers and that fishmongers and butchers were pparently immune. Furthermore, the disease is common in pain, Switzerland, and the Arizona desert.

NDIA

Chloramphenicol in the Therapy of Venereal Diseases.—Rajam nd his co-workers (*Journal of the Indian Medical Profession,* ol. 1, no. 11, Feb., 1955) have used chloramphenicol in the reatment of syphilis, gonorrhea, chancroid, lymphogranuloma enereum, and granuloma inguinale. Chloramphenicol given ntramuscularly proved effective in the treatment of all of these diseases. Parenteral treatment gave better results than oral herapy. Treatment had to be stopped in three patients due to he development of cutaneous allergy. Routine examination of blood in all the patients treated with chloramphenicol did not eveal any harmful side-effects. The empirical dosage of chlormphenicol used for the cure of gonorrhea, chancroid, and ymphogranuloma venereum is not enough to abort a conomitant syphilitic infection during the incubation period. One atient with granuloma inguinale who was resistant to polyherapy responded to 20 grains (1.3 gm.) of chloramphenicol iven intramuscularly. The value of this drug in effecting permaent cure in early syphilis is yet to be decided. One patient came ack because of reinfection three and a half months after he was adequately treated for secondary syphilis with chlormphenicol. This may indicate that the first infection was aleady cured before he was reinfected. The high cost of the rug prevents its being used as a routine antisyphilitic measure, lthough, in penicillin-resistant patients with syphilis or gonorhea, those with granuloma inguinale who are resistant to treptomycin, and those with chancroid or lymphogranuloma enereum who have shown no improvement after sulfonamide herapy, chloramphenicol may be given intramuscularly with enefit.

Effects of Rauwolscine.—Das and his co-workers (*Indian J. M. Res.* 43:101 [Jan. 1] 1955) found Rauwolscine, an alkaloid of Rauwolfia canescens, to have a hypotensive effect. A peripheral asodilator, a sympathicolytic, a central vasotonic, and a reflexlock activity had been demonstrated earlier. The authors' reults were compared with those obtained by using alkaloids of Rauwolfia serpentina in cats and monkeys. A marked fall in peripheral resistance occurred due to vasodilation, but there was no significant alteration in the cardiac output. The effect of his alkaloid was best obtained when it was given intracisternally. ntraperitoneal injection gave an identical response when larger doses were used, but there was a long latent period when this route was used. After intravenous injection the fall in peripheral resistance was preceded by a transient period of cardiac irregularities and increased peripheral resistance. These findings hus point to a predominantly central origin of the hemodynamic response.

Median Rhomboidal Glossitis.—Dr. M. V. Sirsat has reported ix cases of median rhomboidal glossitis (*J. Indian M. A.* 124:493 April 1] 1955). This rare condition is probably congenital. It consists of a benign plaque on the tongue situated anterior to he circumvallate papillae. All six patients came to the hospital with a tentative diagnosis of carcinoma of the tongue. At the hospital the diagnosis of median rhomboidal glossitis was based on the gross features and characteristic location of the lesion. The surface of the lesion in some patients showed fissures and was smoothly glistening in others. It was painless. There was no leukoplakia in any part of the mouth. The submaxillary lymph nodes were enlarged. The characteristic site for this lesion is immune from primary carcinoma. Of 4,400 carcinomas of the tongue seen at the Tata Memorial Hospital, none arose primarily from this site. A biopsy was performed in all six instances to confirm the clinical diagnosis, and no evidence of malignancy was seen. In five instances the surface was covered with stratified epithelium. The epithelium showed acanthosis and hyperplasia with subepithelial round cell infiltration. In the sixth instance there was an exuberant growth of the epithelium, and the appearance could be mistaken for carcinoma; however, there was no evidence of anaplasia in any part of the section. No treatment is necessary, but the lesion may be excised if the patient wishes to get rid of the growth.

Melanoma of the Esophagus.—Dr. M. V. Sirsat reported that in the last 13 years only one case of malignant melanoma of the esophagus was seen at the Tata Memorial Hospital, Bombay (*Indian J. M. Sc.* 9:22 [Jan. 1] 1955). A 40-year-old man was admitted because of difficulty in swallowing solids of one year's duration. There was no pain or hematemesis. There was no evidence of a melanoma in the skin, eyes, or anal canal. A barium meal showed obstruction and presence of a tumor at the lower end of the esophagus. On esophagoscopy a cauliflower-like mass was seen on the posterior esophageal wall about 24 cm. from the incisor teeth. Biopsy showed the presence of large pleomorphic cells with an abundance of basophilic cytoplasm. The nuclei were round or ovoid with clumps of chromatin material. In the hematoxylin-eosin preparation melanin was seen as small particles in the cytoplasm, and after silver staining it was seen in large amounts intracellularly and extracellularly. The patient left the hospital against medical advice.

Antipyretic Activity of Some Indigenous Drugs.—Gujral and his co-workers (*Indian J. M. Res.* 43:89 [Jan. 1] 1955) conducted a series of animal experiments to determine the antipyretic effectiveness of 31 indigenous drugs. Aspirin was used as the standard for comparison. Fever was produced by subcutaneously injecting a 15% suspension of dried brewer's yeast and 2% acacia in isotonic sodium chloride solution. A decoction of the crude drug was introduced into the stomach. Control studies were made with a 2% solution of acacia in isotonic sodium chloride solution. The standard drug was also dissolved in a solution of 2% gum acacia in isotonic sodium chloride solution are administered orally. Only two drugs, Wrightia tinctoria (Indra Jav) and Woodfordia floribunda (Dhaya phul), appeared to be superior to aspirin in their antipyretic action. The active principles of these drugs are being studied.

Fibroma of the Frenum Linguae.—Fibroma of the frenum linguae is found exclusively in infants and disappears spontaneously after a few years. It is rare and appears at the site that is characteristic for pertussis ulcers. K. D. Shah reported a case treated successfully with chloramphenicol (*J. Indian M. A.* 24:471 [March 16] 1955). A 1-year-old boy with a pea-sized ulcer on the frenum linguae was seen. The margins of the ulcer were not raised. Although the mother's Kahn test was negative, antisyphilitic treatment was given for two months without any improvement. The lesion became nodular and developed a peduncle, and the margins became raised. It was not tender and did not bleed on touch. The child was given 50 mg. of chloramphenicol empirically three times a day. The ulcer began to diminish in size from the 4th day onward and had disappeared completely on the 10th day.

Combined Antibiotics.—Chopra and Khajuria (*Indian J. M. Res.* 43:129 [Jan. 1] 1955) have tried combinations of antibiotics with other chemotherapeutic agents with a view to broadening the antimicrobial activity of an antibiotic or reducing its toxicity. Viomycin alone is very effective against gram-negative organisms, but its toxicity is so great that it cannot be used clinically. It was found, however, that a combination of a noninhibitory concentration of viomycin with a relatively small amount of penicillin inhibited the growth of gram-negative organisms. Similarly gram-negative organisms became more susceptible to chloramphenicol when combined with noninhibitory concentrations of viomycin. The organisms tested were Salmonella typhosa, S. paratyphi, S. schottmülleri, and Escherichia coli.

ISRAEL

Myocardial Infarction.—At the 18th medical congress in Tel Aviv Dr. Z. Lewitus of the Beilinson Hospital in Petach-Tikvah reported that between June, 1946, and July, 1953, 1,828 patients with first and recurrent myocardial infarctions were diagnosed among members of the Labor Sick Fund in the coastal region; 469 of these cases (26%) were hospitalized in Beilinson Hospital. An analysis of the dates of occurrence of myocardial infarction showed that the monthly fluctuations were statistically insignificant, except for the month of October, when the decrease of the number of cases from the mean was greater than three times the standard error. These results contradicted the accepted view that the incidence of myocardial infarction is increased in the winter months. Comparing the number of cases during fall and winter with those in the hot months (spring and summer), it was found that a greater number of infarctions occurred in the hot period. In winter 207 cases occurred with 44 deaths; in summer 242 cases with 56 deaths. According to Heyer and his co-workers in Dallas, Texas, where the climate is similar to our own, a prevalence of myocardial infarctions in the hot months was noted. The *sharav* (dry, usually hot weather caused by desert winds) has been suspected of provoking myocardial infarction. Analysis of the moving average of *sharav* days in the past four or five years, compared with the moving average of the number of attacks, failed to show any significant correlation except for divergence during the months of May and October. The significant drop in the number of cases in October might be related to the prevalence of *sharav* during this month. The coefficient of correlation for those two events was 0.1, indicating a slightly diminished incidence of attacks on *sharav* days. Also the analysis of the number of attacks of the day preceding and the day following a *sharav* by the "N" method (Dull) has failed to show the supposed increase in myocardial infarctions at these times. No other correlation could be found between the occurrence of the attack and any of the known and measurable meteorologic characteristics such as temperature, relative humidity, wind strength, or amount of rain.

Public Health Progress.—Dr. H. Nelson, Chief Medical Officer of Pretoria, South Africa, praised the progress of Israel's health standards following his earlier visit in 1951 but severely criticized the neglect of preventive medicine when he reported recently to the heads of governmental and public health authorities on a month's inspection of medical services. Dr. S. Btesh, Director General of the Ministry of Health, prefaced Dr. Nelson's remarks by recalling that the visitor had presented recommendations to the government four years ago. If they had not all been implemented, it was through lack of opportunity rather than reluctance. One of Dr. Nelson's main recommendations was the concentration of all health services under the Ministry of Health. Dr. Nelson pointed out that, if government funds aided medical institutions, then the Ministry of Health should supervise their expenditure. The Labor Sick Fund is praiseworthy, but under the present division of power it exercises involuntary competition. The government allocates health budgets to local authorities without sufficient control of their activities. Some of the larger local authorities even lack qualified medical officers. Compilation of a public health act to supersede existing ordinances is advancing too slowly, due to unawareness of the need for new legislation. Such an act would define the exact responsibility of local and central governments. Local bodies now shirk their duties, vaguely outlined under the present law, and build without considering sanitary requirements. The government itself may build without the sanction of a health inspector. The act would replace the slow and involved court procedure necessary to prosecute an offender against public health. Fines heavy enough to bring home the gravity of an offense must be imposed, instead of the nominal punishment usually meted out. Dr. Nelson balanced his adverse impressions with admiration for the general rise in health. Since his earlier visit, the infant mortality rate had been lowered from 60 to 35 per 1,000. Gastroenteritis, which can be prevented by hygienic living, is still the main cause of infant deaths. Food handling has greatly improved in cleanliness, but much remains to be done.

Need for More Expansion of Medical Schools.—Fifty-three Arab and Druze students are studying at the Hebrew University this year. Thirty-five are freshmen, of whom one is the only Arab woman student at the university. Thirty-one of the 53 are in the college of humanities and social sciences (liberal arts), 4 in the college of science, 2 in the college of agriculture, 10 in the law school, and 6 in the college of medicine (one in the school of pharmacy and 2 in the school of dentistry). The demand for places in the Hebrew University-Hadassah Medical School far exceeds its capacity. There were 284 candidates for 50 places in the freshman class. The pharmacy section had 26 candidates for about 12 places, and the school of dentistry had 2 more applicants than it could accept. In the other five colleges, capacity more or less keeps pace with the pressure because lecture rooms do not limit attendance to the same extent as laboratories.

The increasing demand for medical personnel in Negeb settlements has prompted the Ministry of Health to organize thre seminars to train registered practical nurses, who will receiv 15 months tuition on condition that they afterward serve fo a year wherever the government sends them. About 35 student will attend each seminar, 7 of them being young men. At leas 50 young Arabs applied, and 18 have been accepted. The Ara graduates will staff two family health centers now being buil in the Little Triangle. A special curriculum has been devise for the course. It will qualify graduates for maternal and chil care, first aid, and dispensary work, under the guidance of fully qualified nurse or physician. The public committee for th Negeb settlement had approached the Ministry of Health wit an urgent request for nurses, but none of the 260 graduate who received their diplomas this May agreed to live in a Nege village. They all obtained posts in hospitals, institutions, urban health services. Although there are now 484 student nurse in 11 schools, this apparently large force will be depleted b young women leaving for family reasons. There was, howeve a large choice of candidates for the seminars now being arrange The Ministry of Health has also opened its first seminar fo midwives. Here, too, a year's training will be followed by year's compulsory service. A dozen practical nurses will specialize in midwifery.

ITALY

Surgery in Pulmonary Tuberculosis.—At a meeting of th Lombardy Society of Medical and Biological Sciences Professo Oselladore stated that pulmonary resection is becoming th treatment of choice for pulmonary tuberculosis, because it ca lead rapidly to the clinical healing of old and extensive lesion that did not respond to any previous treatment, even surgica Often it is less harmful to the respiratory function than collaps therapy, especially if it is performed early, and the patient ca be returned to his family and to society in a relatively sho time. This form of treatment is accepted by the patients becaus it gives quick recovery. Despite the success of this method preliminary treatment with collapse and antibiotics should b tried. The surgeon is called on to collapse the walls of the cavity Unlike simple pneumothorax, surgical collapse not only free the lung from the ribs and makes it possible for the organ t retract but also makes possible a constant pressure on the wall of the cavity after it has been collapsed. This pressure is achieved by most of the collapsing techniques. The speaker does not believe that drainage of the cavity is necessary, as is usually believed, but that it may even be dangerous. Closure of the lobar bronchus has also proved useful in favoring the recovery from cavitation. Further progress in collapse therapy can be obtained with fixation of the collapsed lung. The speaker concluded that conservative methods would prevail over the more radical methods.

orneal Alterations in Diabetic Patients.—At a meeting of the ledical Society of Parma Professor Quaranta reported that ome patients with diabetes show corneal alterations consisting f small dystrophic foci in the epithelium that stain with uorescein and that present varying morphological characteristics. Besides elements in which the predominating factor is a tate of simple epithelial impairment, there are foci in which loss of central substance surrounded by a halo of dystrophic pithelium is observed. The foci may be numerous; they do not ave a tendency to coalesce; they are situated mainly in the ower half of the cornea; and they are spread apart or assembled o form dotted areas of varying form and extent. The number f the single lesions and the area of the corneal surface involved letermine the gravity of the keratopathy. Edematous and inltrating perifocal episodes may be present, and this is the only ondition that may lead to a relative confluence of the various oci. These changes were observed in 13 of 38 diabetic patients. The condition may be unilateral or bilateral. Unilateral lesions nay disappear in the eye that was first impaired and appear later n the other eye. The fact that corneal dystrophy is often present n aged diabetic patients in poor general and ocular condition t first led to the assumption that these corneal alterations were f a general dystrophic nature rather than the expression of he diabetes. The speaker performed numerous control studies n nondiabetic persons in the same age group, but corneal esions similar to those found in the diabetic patients were not bserved in the controls.

ORWAY

ooks on Medicine for the Layman.—The educated layman in Norway has recently been cheered and at times puzzled by two ooks dealing with medical problems. Author of "Pasienten g Laegen" (The patient and the Physician) is the late Dr. Trygve raatøy, who while still quite young was put in charge of the sychiatric department of the Ullevaal Hospital. His resignaion of this appointment was tendered in protest against the tereotyped groove into which, in his opinion, hospital medical ervices had slipped. The subtitle of his book, "Fragments of a Polemic Autobiography," gives the keynote to the spirit in which e wrote. The abuses in the world of medicine at which he ilts include the fate awaiting the patient on admission to a ospital, where he has to run the gamut of many tests, unelieved by any close personal contact. From mechanized mediine, he goes on to a colorful description of the various types f physicians who have served under him, from the gifted intelectual bent on a distinguished scientific career to the obscure linician, who is more interested in his fellow beings than in medical library and who retains, until the end, the passionate ove of his patients. One of the characteristic features of this ook, raising it to the rank of a best seller, is the personal touch.

The author of the other book "Lege eller Kvaksalver?" (Phyician or Quack?) is Dr. O. J. Broch, professor of medicine at he University Hospital in Bergen. The title of this volume is nisleading, for Broch gives his readers much more than a disussion of the conflicting claims of orthodox and unorthodox medicine. Much of the book is devoted to subjects of more genral interest; to an explanation of the methods of scientific reearch, to world health problems, and to the elements of hysiology and pathology. The reader that Broch evidently had n mind is the educated layman who wants to find out the real easons for the public's love of quackery. Broch's approach is istorical, and he introduces the reader to the founders of such ogues as homeopathy, iris diagnosis, and the like. Although e defends orthodox medicine against unorthodox medicine, he dmits the mistakes of the former. He pays his readers the ompliment of not talking down to them.

nfectious Mononucleosis.—The frequency of a given disease eems to rise abruptly with our knowledge of it. In the Trondeim Central Hospital, infectious mononucleosis was represented as recently as 1948 by only 5 cases, whereas in 1952 the corresponding number was 26. In a study of 17 patients treated between 1948 and 1953, Dr. R. Savosnick points out how rare it is for this disease to be recognized before a patient is admitted to a hospital where blood cell counts are made (*Tidsskrift for den norske lægeforening,* May 1, 1955). In his series there were only eight patients in whom infectious mononucleosis was diagnosed before admission to the hospital. On the other hand, 31 were admitted with a tentative diagnosis of diphtheria and 19 with a diagnosis of angina faucium. Thirty patients were between 16 and 20 years of age; 29 were under 16, 11 of these being in the 1 to 5 year age group. Savosnick suggests that the rarity of this disease after the age of 30 may mean that most members of a given community have already suffered from it before reaching this age. He suspects that its rarity in the first half year of life may mean that the newborn infant enjoys a passive immunity transferred to it by the mother. In 40 of the author's patients, 70% of the leukocytes counted were mononuclear. Indeed, the diagnosis of infectious mononucleosis depended in all 77 patients on the demonstration of large, atypical lymphocytes. Palpable lymph nodes were also found in every patient. Two patients had visible jaundice, and it may be that the hepatic functions were more or less impaired in several others, as many other observers have found the liver involved in over 90% of their patients. The recovery of all of these patients after an average illness of 10 to 13 days did not seem to be due to modern antibiotic treatment, for the reaction was much the same whether the drug given was a sulfonamide (18 patients), penicillin (19 patients), or chlortetracycline (40 patients).

Pulmonary Embolism.—Certain textbook traditions regarding the signs of pulmonary embolism are challenged by Dr. Per Gundersen in *Nordisk medicin,* April 7. This study covers the period of Oct. 1, 1949, to Oct. 1, 1954, during which there were 119 cases of pulmonary embolism among the 10,525 admissions to the Ullevaal City Hospital in Oslo. Among the 49 patients who died of pulmonary embolism, 27 were examined post mortem. It has been taught that clinical signs of thrombophlebitis are often associated with pulmonary embolism, but this was the case with less than 10% in this series. Blood-stained expectoration has also been regarded as a common sign of pulmonary embolism, but, among the 27 patients examined post mortem, there were only 8 with such a history. On the other hand, all 27 patients were febrile, and 23 of them also suffered from dyspnea. When, therefore, an elderly patient becomes febrile and presents the findings of bronchopneumonia and when he does not respond satisfactorily to antibiotics after several days, it is well to suspect pulmonary embolism and to be prepared to give anticoagulant treatment. As was to be expected, the proportion of elderly patients in this series was high (54 of the 119 were over the age of 70), but it was more surprising that 7 of these patients had been up and about, apparently enjoying good health, when signs of pulmonary embolism set in.

Pernicious Anemia.—Norway enjoys the distinction of being the first country to include pernicious anemia among the diseases to be listed specifically as the cause of death in official returns. It has therefore been possible since 1885 to keep a check on this disease as a cause of death. That patients now die with it but not of it indicates the efficacy of modern treatment. A follow-up investigation was undertaken by Dr. P. Kolstad (*Nordisk medicin,* April 14, 1955), who traced 127 men and 170 women who were discharged from the hospital between 1935 and 1953 with a diagnosis of pernicious anemia. In this period there was a slight rise in the incidence of this disease, partly because of the upward shift of the age of the population and improved diagnostic tests. The ages of the patients ranged from 24 to 83 years when the disease was first diagnosed; 76% were between 50 and 80. At the time of the survey the duration of the disease ranged from 1 to 26 years, and 50% had been alive 7 years after the disease was diagnosed. Among the 50 patients reported as dead, the death of only 3 was attributed to pernicious anemia. Although cancer of the stomach would have killed only 13% of members of the community of the same age and sex distribution, it accounted for the death of 20 patients (40%) in this group. Apoplexy accounted for 22%, but heart disease did not figure prominently as a cause of death.

PERU

Pulmonary Resections in Tuberculosis.—Dr. Mario Molina and his co-workers reported a series of 80 patients with active pulmonary tuberculosis whose lesions varied in extent and who were unresponsive to medical therapy (*Archivos peruanos de patología y clínica*, vol. 9, no. 1, 1955). Fifty-seven patients underwent lobectomy; 12, pneumonectomy; 9, lobectomy plus segmental resection; and 2, parenchymal enucleation. The right lung was partially or totally removed in 54 patients and the left in 26. Of 24 patients who underwent either upper lobectomy or pneumonectomy without previous collapse therapy, 6 showed postoperative reactive disseminations and 2 died on the operating table. In a group of 24 patients in whom limited thoracoplasty plus apicolysis and temporary plombage, by means of Ping-Pong balls, was performed as a first stage operation, no reactive disseminations occurred, and only one patient died on the operating table. The performance of collapse procedures some time before the execution of the two types of operations mentioned diminishes the volume of the pleural cavity, thus preventing the overdistention of the unremoved part of the lung when a partial resection is made, or the harmful displacement of the mediastinum in case of total removal of the lung. On the other hand, in 48 patients in whom the Carlens double-lumen endotracheal tube was used during the operation, only one postoperative dissemination resulted, with no operative deaths; in the remaining patients in whom a simple tube was used, there were eight postoperative disseminations and three operative deaths. The authors recommended the use of the Carlens tube immediately before starting the operation, since it not only permits the complete functional independence of both lungs but also minimizes the operative hazards and the chances of postoperative tuberculous disseminations.

Of the 20 patients in whom bronchoscopy showed detectable tuberculous bronchial lesions, 11 developed fistulas as a postoperative complication (3 of these had undergone pneumonectomy and all died); lobectomy was performed on 7 and of these one died; the remaining 2 had a segmental resection and both survived. There is probably a close relationship between active bronchial tuberculosis and the development of bronchial fistulas after the surgical treatment of the disease. That this complication is one of the most dangerous for the patient who undergoes pneumonectomy must be kept in mind. Manually controlled respiration is required as it assures a quiet intrathoracic field and sharply reduces the danger of hypoxia and hypercapnia. Following exeresis, the sputum became negative in 76 of the 80 patients. The blood lost during the operation was measured so that the amount lost could be replaced as nearly as possible. The total operative mortality rate was 7.6%, but, since the introduction of collapse procedures prior to resection, the use of Carlens' tube, and controlled respiration, the mortality and morbidity rates have significantly diminished. The authors concluded that pulmonary resection is a valuable method of treatment especially when lesions not benefited by other methods have developed.

Blastomycosis.—Five cases of South American blastomycosis were reported by Morales and Romero (*Archivos peruanos de patología y clínica*, vol. 9, no. 1, 1955). This disease is uncommon in Peru as compared with other Latin American countries and is practically limited to the rural population. All of the patients were men. The diagnosis was made by finding the fungus in microscopic sections of mucocutaneous lesions or involved lymph nodes. Cultures of biopsy specimens were also positive. When bronchopulmonary involvement was suspected, sputum smears were also found to be positive. Tissue specimens were stained by Leishman's method. Some fungi presented only one bud looking like the Blastomyces dermatitidis, which causes North American blastomycosis. In all the patients positive direct and crossed skin reactions were observed. One patient who had had the disease for only a short time had disseminated mucocutaneous lesions, but he was in good general health, whereas the others had had the disease for many years and showed general lymphatic and visceral involvement and severe malnutrition. In three patients a clinical remission was obtained with sulfisoxazole (Gantrisin) and other sulfonamides, and most of the lesions healed satisfactorily. No relapses were observed. In the other two patients the subjective and clinical improvement was only fair. The authors conclude that early diagnosis and treatment markedly improve the prognosis.

Meeting of Psychiatrists.—At the first Peruvian Journeys on Psychiatry in Arequipa in April Dr. Sal y Rosas said that the number of patients with mental diseases in Peru has been steadily increasing in the last 30 years but that facilities for their care had not kept pace with this increase. The Victor Larco Herrera Hospital of Lima is the only institution in the country especially devoted to psychiatric patients. Although its original capacity of 400 beds has been increased to 1,400, the number of psychatric patients for whom adequate medical attention is lacking is still high and in many parts of the country no psychiatric services of any kind are available.

Dr. R. Jerí stated that about 50% of all the patients coming to the hospitals of Lima suffer from either primarily psychological or psychosomatic disturbances, but most of the hospitals of Lima and all of those of the other cities lack a psychiatric service. It is essential that every hospital have a well-equipped psychiatric service consisting of a psychiatrist, a clinical psychologist, a psychiatric nurse, and a psychiatric social worker. At present, since it is not possible to create such units in every hospital in the country, the general practitioner is urged to familiarize himself with the simpler psychiatric techniques so that he may better serve his patients.

Dr. Sal y Rosas, speaking on epilepsy, said that besides irritability the epileptic personality is characterized by parasociability in that there is a marked tendency to diligence, flattery, servilism, excessive courtesy, and attentiveness. The person tends to become hypersociable without realizing that he may thereby lay himself open to ridicule. This applies especially to those with idiopathic epilepsy. Electroencephalography is the most important method for diagnosing the disease, permitting in many patients with symptomatic epilepsy a localization of the irritative focus.

Medical Endowments.—Drs. Oswaldo Hercelles and Alberto Hurtado, in their visit to the United States in March, obtained valuable help from several American institutions for the better functioning of Peru's one school of medicine, San Fernando, in Lima. As a result new buildings are being erected for teaching the basic sciences, a large hall has been built at the Arzobispo Loayza Hospital for clinical teaching, and a similar hall has been built at the Santo Toribio de Mogrovejo Hospital for teaching neuropathology. The library has been entirely reorganized. Free subscriptions to several medical magazines published in the United States have been obtained and many books that the Library of Congress in Washington has declared excess are being sent to the school. The services of an expert in hospital administration have been obtained for a two-year period. The Rockefeller Foundation has made a donation of $90,000 for the department of physiopathology in charge of Dr. Hurtado. The Kellogg Foundation will continue to support the biochemistry department, whose director, Dr. Guzmán Barrón, has recently visited Harvard University. The Kellogg Foundation will also continue its aid to the Cardiology Institute of the Dos de Mayo Hospital.

Surgical Risk in the Cardiovascular Patient.—At a meeting of the Peruvian Society of Cardiology in May, Dr. Ricardo Subría reported the classification of the status of the cardiovascular system that has been developed in the cardiological departments of the Dos de Mayo Hospital and National Institute of Neoplastic Diseases in order to evaluate the surgical risk in every cardiovascular patient to be operated on. This classification, based on the clinical features, has been used in 2,684 patients in a trial to ascertain what precautions should be taken by the surgeon and the anesthesiologist before, during, and after the operation. The results so far obtained justify its use. In this classification grade 1 includes patients without cardiovascular disease; grade 2, patients with cardiac disease detectable by physical examination but without limitation of physical activity; grade 3, patients with cardiac disease resulting in slight to mild cardiac insufficiency, reflected in moderate limitation of physical activity; and grade 4, patients with cardiac disease resulting in cardiac failure, and inability to carry on any physical activity without discomfort. In 2,539 patients in grades 1 and 2, the operative mortality due to central circulatory causes was 0.1%; in 134 patients in grades 2 and 3 it was 6%; and in 11 patients in grades 3 and 4 it was 36%. Patients with severe anemia, hypertension, obesity, advanced arteriosclerosis, or chronic shock tolerated the operation and the postoperative period poorly.

Dr. Warren Honored.—Dr. Earl Warren, professor of neurosurgery of the Johns Hopkins University, Baltimore, was named honorary professor of the Universidad Nacional de San Marcos in a special session of the faculty of medicine on May 2. The nomination was made by Dr. Oscar Trelles, professor of neuropathology. Dr. Warren was also made an honorary fellow of the Peruvian Society of Neuropsychiatry and Legal Medicine.

SWITZERLAND

World Health Assembly.—The Eighth World Health Assembly held in May in Mexico City was attended by delegations from 76 member states. The purpose of this assembly was to review and examine international health work assisted by the World Health Organization on all continents and to plan future health programs. Most of the session was occupied by a study of the director-general's report of the work accomplished by the World Health Organization in 1954 and of the proposed program and budget for 1956. Dr. M. G. Candau, the director-general, explained that the two greatest challenges now facing the World Health Organization are the eradication of malaria and the use of atomic energy in medicine and public health. Ever since its inception the World Health Organization has sought to mobilize all internationally available resources to help control malaria. As a result of energetic action undertaken by national administrations, often assisted by the World Health Organization and other agencies, more than 230 million people can today be considered either freed or protected from malaria. Future efforts to bring safety to over 370 million people still exposed to malaria must consider the fact that anopheline mosquitoes, which transmit malaria, may become resistant to insecticides. For this reason, we must aim at eradication rather than control.

As the resources of the World Health Organization for the development of peaceful uses of atomic energy related to medicine and public health are limited to $42,000 in 1956, it was decided that the organization should confine its activities to international aspects that individual countries were unable to deal with. The program will therefore include the question of health protection against the effects of radiation with emphasis on protecting the community against health hazards connected with the location of atomic energy plants and the contamination of water by liquid wastes, of air by volatile materials, or of the soil and the sea by solid wastes disposed therein. This part of the program would also include the establishment of standards for radioactive material and of units of radioactivity. The World Health Organization will provide expert advice and will collect and disseminate relevant scientific information. The program will also include study of the medical use of radioisotopes in therapy, diagnosis, and research. The organization, acting as a clearing house for the exchange of information, will develop long-term help to countries in training adequate technical personnel through fellowships, consultants, study tours, and advanced training courses. The World Health Organization is also planning to convene two expert groups during 1956 in order to study various aspects of the problem.

A further decision was taken to expand the organization's antipoliomyelitis program. The existing program had included the setting up of a basic network of poliomyelitis laboratories to study the different strains of virus identified in each participating country, as well as other viruses responsible for diseases similar to poliomyelitis. These laboratories were also studying the epidemiology of poliomyelitis and were undertaking surveys of the natural immunity in different populations. The new resolution requires the preparation and distribution of standard laboratory reagents in order to facilitate the work of national poliomyelitis centers and the training of virus specialists in new tissue culture techniques.

Incompatibility of Mercaptomerin and an Anticoagulant.—A repeated check of the prothrombin time is essential for patients receiving anticoagulant therapy but in some this control does not provide a satisfactory indication of blood coagulability. Knobel and Saudan of the University of Lausanne (*Schweiz. med. Wchnschr.* 85:131, 1955) reported that the highest values were registered when the patient was given mercaptomerin combined with Marcoumar, an anticoagulant. In vitro mercury precipitates the Marcoumar. It can thus be inferred that the chemical properties of mercaptomerin and of Marcoumar might provoke in vivo, perhaps by fixation or even by precipitation, an inactivation of the Marcoumar. As soon as the mercaptomerin was replaced by a nonmercurial diuretic, the prothrombin time decreased. This incompatibility between mercaptomerin and Marcoumar should be kept in mind, because the two drugs are often given together for thromboembolic complications in patients with asystole. This incompatibility may extend to other derivatives of mercury, and even to other drugs containing heavy metals.

Cytochrome C in Inanition.—Th. Béraud and A. Vannotti of the University of Lausanne have studied the variations in cytochrome C in states of inanition of rabbits. Within the range of cellular respiratory catalyzers, this enzyme plays an important part. The question arose as to some possible alteration in the concentration of this respiratory pigment, according to the intensity of cellular combustion. A difference was noted between the concentration of cytochrome C in the livers of rabbits who had received food and those of rabbits who had eaten nothing in the previous 48 hours. The concentration of cytochromes varies with the tissues and the intensity of the respiratory metabolism. The biosynthesis of this enzyme constitutes a process that is essentially independent of the biosynthesis of hemoglobin. When combustion increases the intensity of cytochrome C synthesis parallels that of hemoglobin.

Role of Proteins in a Low-Sodium Diet.—In most studies made on salt-poor diets, the percentage of sodium is carefully established for every element of the ration, and the total caloric value of the diet is often specified, but little attention is generally given to its protein content. Dr. M. Demole, of the University of Geneva, however, calls attention to the fact that most low-sodium diets are also poor in protein. Even if the chief indications for a low-sodium diet are diseases for which the reduction of proteins is also recommended, the individual requirements of each patient must be determined to prevent nitrogen imbalance. On the other hand, in patients with hepatic cirrhosis or lipoid nephrosis a high-protein diet should be prescribed.

Vitamin B_{12} and Protein Metabolism.—By determining the concentration of amino acids in normal subjects and in those with various diseases, Wild and his co-workers (*Schweiz. med. Wchnschr.* 85:145, 1955) have demonstrated that the vitamins of the B complex stimulate the intestinal resorption and the utilization of amino acids. Alterations in the concentration of amino acids after injections of vitamin B_{12} indicate a stimulation of protein synthesis. The anabolic action of this vitamin is effective even in subjects who already have an adequate quantity of this vitamin. Vitamin B_{12} is effective in pernicious anemia only if the hepatic function is normal.

Artificial Hibernation in Pediatrics.—A. Mégevand and P. A. Messerili, who have induced artificial hibernation with chlorpromazine at the Clinic of Pediatrics of Geneva University, report remarkable results in the treatment of the neonatal accidents following disorders of oxidation and less constant results in the treatment of the infantile neurotoxic syndrome. Although chlorpromazine is practically free of any toxic effect, it should not be used on children without having established, as clearly as possible, the etiological diagnosis. Bronchopulmonary diseases and toxic comas, especially those related to barbiturates, constitute contraindications.

CORRESPONDENCE

WORLD HEALTH ORGANIZATION ASSEMBLY

To the Editor:—In view of the increasing interest shown by the medical profession in the activities of the World Health Organization, I would like to pass on my impressions of the Eighth World Health Assembly. For the first time the assembly was held in this hemisphere. Approximately 300 delegates from 75 member countries met in Mexico City, Mexico, from May 10 to May 27 to discuss problems of health throughout the world. I had the privilege to be designated by the American Medical Association to serve on the United States delegation. The most significant assembly decisions regarding program matters concerned promotion of malaria eradication on a global scale, the role of WHO in developing the peaceful uses of atomic energy, and alteration in the requirements of the international sanitary regulations. The increasing resistance to DDT shown by several of the anophelines in different parts of the world points to the need for an all-out attack on the problem of malaria before a more general resistance in the mosquito nullifies the effects of insecticide programs. The assembly decided to use $309,000 from Casual Income, in addition to the amount proposed in the director-general's budget, for the purpose of helping governments to achieve this end, primarily through consultation and the training of personnel. A fund to accept voluntary governmental and private contributions was also established to provide further help in the form of research, supplies, equipment, and services.

The assembly defined the role of the World Health Organization in the new international program to develop the peaceful uses of atomic energy. The organization will collect and disseminate scientific information on the medical and public health aspects of the program, with particular emphasis on the subjects of standards, the use of radioisotopes in therapy, diagnosis and research, and the training of personnel. The yellow fever provisions of the international sanitary regulations were discussed at length. The decision was taken, in the light of newer epidemiological knowledge, to narrow the areas against which restrictions may be placed to those areas in which yellow fever actually exists, instead of continuing to include areas in which it was once known to exist. This action will serve to expedite travel and the flow of commerce, while still providing adequate protection. The major financial issue concerned the revision of the scale of assessments. An anomalous situation has existed since the withdrawal of the "iron curtain countries" from active participation in the work of the organization. Although they have been assessed their share of the budget yearly, they have made no contribution. This year the United States delegation was instructed to press for the removal of these noncontributing countries from the 100% scale of assessments. The assembly agreed to this in principle. However, because this change, together with certain other changes also agreed to, such as bringing the WHO scale in line with the present United Nations scale would prove a financial strain to some of the poorer countries, it was decided that the change over should be a progressive one over a four year period.

I am grateful for having had the opportunity to attend this assembly. The work of the Eighth World Health Assembly once again gave positive proof of the great value of whole-hearted United States participation in the World Health Organization. Such participation helps to protect the health of Americans, at home and abroad; it furthers the progress of medicine and of the medical profession throughout the world; and possibly most important of all, it is a force in our world-wide effort to build the conditions of peace.

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SENSITIVITY TO XANTHYDROL

To the Editor:—In the Feb. 26, 1955, issue of The Journal, page 719, Wendell T. Caraway, Ph.D., presented a rapi turbidimetric test for the diagnosis of uremia. In this te xanthydrol is employed to produce a suspension of the insolubl dixanthylurea. We have attempted to modify this method so a to make it applicable to the quantitative determination of bloo urea. Limited success has been attained using gum acacia as protective colloid and measuring the resultant turbidity in th electrophotometer. In the course of these experiments, both o us developed a contact dermatitis on the hands and face charac terized by marked erythema, small vesicle formation, and pruritus. This condition became apparent in both of us afte we had worked on this method for a period of three to fou weeks. To confirm our suspicion that the xanthydrol was th agent responsible for the allergic reaction, we performed a patc test on ourselves and two laboratory workers who had neve been exposed to xanthydrol. Both of us developed a positiv reaction with marked erythema at the end of 12 hours; the con trols exhibited a negative reaction. Therefore, we have conclude that there is a definite danger of skin sensitization to xanthydr after prolonged contact with this chemical. Other workers usin or planning to use xanthydrol are cautioned to avoid exposu of the skin to the reagent.

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THE FAMILY PHYSICIAN

To the Editor:—In what was otherwise a scholarly and wo *man-like article in* The Journal, *page 535, June 18, 1955,* I Emil Seletz *diverges from his task of making "a plea for p vention of deaths from reversible injuries of the brain."* *chooses in one instance to describe a family doctor* who *callous enough to berate a family for summoning him* at *p. m. to attend a patient in apparent extremis. On the* very n *page he proceeds to portray what he terms* an almost everyd occurrence in *which* a *family doctor ignorantly sits* by the be side and watches his *patient* die *without lifting a finger*. T author's prose is graphically complete with *screaming* sir and newspaper headlines. On encountering these *suppose* illustrative accounts, I was constrained to glance again at magazine cover in order to be certain a copy of a popu magazine had not been picked up by mistake. It took onl moment more to find from the footnote that this paper h been read before a section of the American College of Surgeo I had hoped that this intraprofessional sniping had died a w deserved death but, alas, in the minds of some, deep conten of the general practitioner still smolders. It is regrettable t such irrelevant material should see the printed page. The effo of organizations such as the American Academy of Gene Practice (and even of the medical schools and hospitals) encourage the development of competent family doctors seriously hampered by such irresponsible remarks by an auth of a nationally distributed article. To include pointedly critic statements in a scientific paper is untrue and unfair. The auth owes an apology to all his readers.

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To the Editor.—Dr. Emil Seletz's article in the June 18, 195 issue of The Journal, page 535, reflected, to my way of thin ing, a highly critical and caustic attitude toward the family ty of physician, and I wondered if the proofreading staff got th same impression. The first paragraph points up the derisivene nd sets the stage for two more innuendos of the same caliber. his case report he again takes a swipe at the family physician, nd finally in a most sarcastic tone he states, "A day or two ter, when the child is found unconscious, instead of consulting specialist, the family doctor rushes the child to the hospital, nd, like the traditional painting of the physician, sits by the edside and comforts the parents until the child, with the surically curable hematoma, finally dies." To be sure everybody entitled to his own opinion in regard to his fellow colleagues, ut an article in THE JOURNAL of the American Medical Association is not the place to air such views. I might suggest that the outhern California section of the American College of Sureons arrange a joint meeting with their brethren of the Amerian Academy of General Practice. Such a meeting would assure r. Seletz that the present-day family doctor is just as well ualified in his specialty as the well-trained surgeon. It would lso serve one more important purpose. It would prove to him hat the specialists and the general practitioners can and do ork harmoniously in most instances and that it is this kind f relationship that pushes medicine on to greater and greater ccomplishments.

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o the Editor:—After reading the article "Recent Trends in anagement of Craniocerebral Injuries" by Dr. Emil Seletz in he June 18 issue of THE JOURNAL, one wonders whether the aper was edited before it was printed. The author leaves no oubt in the mind of the reader that he holds the general practioner and the family doctor in the greatest disdain and concedes him not the slightest intelligence, either general, medical, r otherwise. Any newsman or radio commentator, glancing hrough the article, will now feel that he has an authoritative ource to condemn American medicine, since most doctors are general practice anyway. I believe Dr. Seletz's article is a lap in the face to our present system and a feather in the cap f those who are shouting for socialized medicine.

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NNIVERSARY OF ANTIRABIC INOCULATION

o the Editor:—On the occasion of the 70th anniversary of the rst inoculation against rabies I am submitting a translation of n excerpt from "The Life of Pasteur," by Pasteur's son-in-law, ené Vallery-Radot.

"On a Monday morning, July 6, 1885, there appeared at asteur's laboratory an Alsatian boy, nine years old, named oseph Meister, accompanied by his mother. The boy had been itten by a mad dog on the second evening preceding his visit o Pasteur. The child had been on his way to school in the own of Meissengott, near Schlestadt, when attacked by the og. He had protected his face with his hands, and hands and rms had received many bites. A passing mason drove away he dog with an iron bar and freed the child, covered with blood nd saliva. The dog ran home and bit its master, who shot it. oseph's parents were worried and consulted the local doctor, ho advised the mother to start next day for Paris, where she hould consult a man who was not a doctor, but who would e able to do whatever could be done.

"Pasteur was profoundly affected by the fourteen wounds resent on the child's limbs. Dared he risk with this child the reventive treatment which had well succeeded with dogs? The ituation was full of anguish. He helped mother and child to uitable lodgings and gave them an appointment for five o'clock hat afternoon. In the meantime he consulted the well-known hysicians Vulpian and Grancher. After their examination, they ecided that the first inoculation should be made that evening. asteur arranged for a room for child and mother in the Rollin ollege, and Joseph was soon playing with Pasteur's chickens, abbits, and guinea pigs. On July 10, Pasteur informed his son-n-law that all was well so far. However, he became anxious as the virulence of the inoculations increased. His wife wrote to her children, 'Another bad night for your father. He cannot get accustomed to the need for treating this child as a last resort, yet he knows that he cannot do otherwise.' Another letter to his son-in-law showed that Pasteur's hope was growing. 'Dear René, I think that great things are happening. Joseph Meister is going to leave the laboratory. He is very well this morning and has slept well, though not tranquilly; his appetite is good and he has no fever. One of the greatest medical feats of the century is perhaps developing, and you would greatly regret having had no share in it.'

"Pasteur was experiencing an infinite variety of emotions. Moments of hope were followed by periods of doubt and anguish, yet throughout he retained the firm desire to save this child's life. He was temporarily unable to do his regular work. Every night was uneasy and feverish. Through visions accompanying insomnia he seemed to see this child about to die, like one he had seen succumb at the Trousseau hospital. During a treatment-period of ten days, Joseph Meister received twelve inoculations. The final ones he accepted joyfully. Pasteur's nights were still cruel. Insomnia, which men of action usually escape, does not spare men of intense mental processes. Pasteur, in spite of the weight of his accumulated experience, was for the time a prey of phantoms, scarcely able to believe that his patient would not die. But the little Joseph Meister could at last return to Alsace.

"On October 26, 1885, Pasteur presented a paper to the Academy of Sciences, describing the treatment and result occurring in this case of the antirabic inoculation he had devised and thus for the first time applied to a human individual. Said the President of the Academy, 'We have the right to state that the date of the session now held here will remain forever memorable in the history of medicine and eternally glorious for French science. Onward from today, humanity is armed with the means of combating the lethality of rabies and of preventing its ravages. This we owe to Monsieur Pasteur, and we cannot have too much admiration and gratitude for efforts which have terminated in such a splendid result.'"

I knew Joseph Meister well for several years. Until his suicide in 1940, he served as warder at the Pasteur Institute and often aided me in conducting visitors to the library, crypt, and Pasteur's laboratory at the Institute. He lent me letters addressed to him by Pasteur, expressly stipulating that they should not serve for any financial return or any exploitation. Photostats were presented to the *Virginia Medical Monthly* and the John Hay Library at Brown University, Providence, R. I.

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Paris, France.

SPEED IN CARS

To the Editor:—I have read with interest the splendid editorial entitled "Wanted—Safety Devices for Automobile Passengers" (THE JOURNAL, June 11, 1955, page 482). All that was said is worthy of much consideration, but to my opinion the basic cause of many of these hazards has not been presented, namely, terrific speed. I graduated from Rush Medical College in 1894 and am still in active work in Terre Haute, Ind., at age 83. I have been in my present offices 58 years and have never been ill from the office in all these 61 years of practice. I had the first electric auto in Terre Haute and one of the first gas cars in the city. In all that time I never had one accident; I seldom exceed 55 miles per hour. I was never late for an appointment and never lost a patient from slow transportation. The point I am trying to make is that if auto manufacturers would make cars that would not travel more than 60 miles per hour we would save many, many lives and have less hysteria among our people and less work for us doctors.

FRANK E. WIEDEMANN, M.D.
Rose Dispensary Building
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GOVERNMENT SERVICES

ARMY

Mass Casualties Course.—The Army Medical Service will conduct its postgraduate course on the medical care of atomic casualties at the Walter Reed Army Medical Center six times in the fiscal year beginning July 1, 1955, instead of four times a year as previously. This is being done to meet the greatly increased demand from civilian physicians throughout the country for admission to the sessions. Since a strict quota is maintained under an allotment system, applications for attendance from physicians or other qualified professional personnel must be made through their respective affiliations. In addition to the American Medical Association and the professional schools these affiliations include the U. S. Public Health Service, the Federal Civil Defense Administration, the Veterans Administration, and the armed forces medical services. Reserve medical officers may apply through the chief of their military district to the commanding general of the appropriate Army area. Enrollment for the first course has been completed, as applicants are required to file their requests four weeks in advance of the course date desired. Dates for the six courses of the year are: July 11-16; Sept. 12-21; Dec. 5-14; Jan. 30-Feb. 8; March 19-28; and June 4-13. Lodging and travel expenses for those attending the course are borne by the individual or the organization he may represent. Clearance for contact with atomic energy information is unnecessary as the course membership is entirely professional and the material used is unclassified. The course has two major assets: One is the participation method followed in the conduct of the course, and the other is the realistic approach to the situations and problems studied. A military crisis is presented after the simultaneous delivery of several bombs on military or civilian centers of population, resulting in thousands of casualties.

NAVY

Curriculum for Reserve Medical Companies.—A "package" curriculum for naval reserve medical companies has been prepared and is now being distributed to such units throughout the United States. This curriculum was developed by the Naval Medical School and the bureau of medicine and surgery. It features instruction in atomic medicine, physical standards and examinations, the U. S. reserve forces, and the Defense Department and will be a part of the training opportunities afforded the inactive medical department reservist during fiscal year 1956. The subjects for instruction are offered as a guide for 12 of the unit's 24 regularly scheduled drills. In addition to affording a detailed outline of the study subjects to be presented, the curriculum furnishes 4 textbooks; 12 lecture pamphlets; chapter 15 of the manual of the medical department; Army Regulation 40-115; a list of additional reference textbooks; a list of training films available at all district film libraries; and suggestions to instructors for an effective presentation of the subjects assigned. Considered to be the first step in prepared programs for specialized (nonpay) medical companies, plans are now under way to develop next year's curriculum featuring preventive medicine subjects.

Clinical Clerkship Training Program.—The chief of naval personnel has authorized commandants of all continental naval districts to issue orders for special active duty, with pay up to and including 60 days, to ensigns (medical), who are selected for the Naval Clinical Clerkship Training Program, beginning July 1, 1955, and continuing throughout the fiscal year of 1956. Conducted annually throughout the United States at all teaching naval hospitals, the program affords unusually interesting and informative training for the medical student and future naval reserve medical officer during his vacation from medical school.

The only student program sponsored by the Navy Departme for medical students is the Ensign 1995 (Medical) Program Eligible candidates are limited to enrolled students or to thos who have been accepted for enrollment at medical schools i the United States and Canada, accredited by the Council o Medical Education and Hospitals of the American Medical Association. All applications from civilian individuals ar processed through the U. S. Navy Offices of Naval Officer Procurement, located in various principal cities. On inquiry either in person or by mail, the officer in charge of that offi will provide information, necessary application forms, a assistance in every practicable way.

PUBLIC HEALTH SERVICE

Health Services for American Indians.—The Public Hea Service, U. S. Department of Health, Education, and Welfa announced that it is assuming responsibility for health servi for American Indians. Public Law 568 of the 83rd Congr transferred the Indian health and hospital program from Department of the Interior to the Public Health Service effect July 1. The program affects about 350,000 Indians living reservations. A division of Indian health, located in the servi bureau of medical services, has been created to administer program. Dr. James R. Shaw, a Public Health Service off who has headed the Indian health program for the past years in the Bureau of Indian Affairs, will continue in capacity as chief of the new division. Dr. Frank French Dr. Joseph Dean will continue as assistant chiefs. About 3 employees, most of whom are located in hospitals and offices in the western parts of the country, have also been tr ferred with the program.

Dr. Leonard A. Scheele, surgeon general of the Public H Service, in commenting on the transfer said: "Although municable diseases among most Americans generally yielded to modern medical treatment and public health mea preventable illnesses are accounting for half the deaths ar Indians who live on reservations. In 1950, the average a the time of death among these people was only 36. In con it was 61 among the white population. Our immediate ta to control the diseases that are taking this toll." Dr. Sc outlined plans for a twofold health program. First, the me care program will be expanded to provide clinic and ho services to as many Indians as possible who need such Fifty-six hospitals are operated by the program, and privat other nonfederal hospitals are used on a contract basis second part of the program will be to step up public healt preventive services among the Indians. This will be done th expansion of field health facilities and services, public nursing activities, maternal and child care, school health, tation, health education, and dental services. The Public Service has set up a study of the entire Indian health pr and methods for meeting it. Such a study was directed Congress, with a report of findings due in October, 1956.

Reorganization of Biologics Control Program.—A new Di of Biologics Standards will become a part of the Nation stitutes of Health. Heretofore, the biologics control progra operated as a constituent laboratory of the National biological Institute. The reorganization will result in ar mented professional staff for the new division, expansion amount of testing and plant surveillance conducted National Institutes of Health, expansion of research rela the development and control of biological products, and str ening of supporting services such as administration, management, and statistics. The creation of the new divisi become necessary in order to deal with increasingly co problems in the fields of biological products, especially vaccines. Dr. Carl L. Larson, director of the Rocky Mo Laboratory, Hamilton, Mont., has been named chief division.

COUNCIL ON MENTAL HEALTH

rom time to time the Council on Mental Health draws atten- to valuable material on psychiatry that has been developed other mental health or psychiatric agencies and has not viously been published in other journals of general circulation. he following communication, "Psychiatrically Deviated Sex enders," was formulated by the committee on forensic psy- atry of the Group for the Advancement of Psychiatry, con- ing of Drs. Philip Q. Roche, Chairman; Vernon C. Branham; lter Bromberg; Hervey Cleckley; Frank J. Curran; Manfred Guttmacher; and Leroy Maeder.

he material presented here was first published in report 9 the Group for the Advancement of Psychiatry. The com- tee also included an appendix, "Synopses of Special Sex chopath Laws, United States," which is a comparison of the te statutes dealing with sex offenders.

he purpose of the report was to bring to the attention of ponsible persons the need for new medical legislation deal- with sex offenders and to indicate that in some instances awful sex acts need to be recognized as a surface symptom a more profound psychic disturbance. The material presented e was first published in February, 1950, has been revised the committee on psychiatry and law of the Group for the vancement of Psychiatry as of November, 1954, and has n reviewed by the Council on Mental Health.

RICHARD J. PLUNKETT, M.D., *Secretary.*

YCHIATRICALLY DEVIATED SEX OFFENDERS[1]

INTRODUCTION

n recognition of the need for rational legislation dealing h sex offenders the forensic committee of the Group for the vancement of Psychiatry conducted a study from 1947 to 19.

GENERAL CONSIDERATIONS

The preponderance of persons who carry out sex offenses which they are punishable by our current laws are not in- ved in behavior fundamentally different from that common- ce in the population; such persons are not necessarily to be arded as suffering with psychiatric disorders or as socially gerous. It is said that only a small proportion of males con- ted of sex offenses have been involved in behavior that is terially different than that of most males in the population. is small group, which numbers in the neighborhood of 5 to %, is that which engages our attention as psychiatrists. nong them will be found the feeble-minded, the psychotic the so-called psychopathic individuals. They are hereinafter ignated as psychiatrically deviated sex offenders.

The first valid legislation dealing with sex offenders was passed Illinois in 1939. There are now 20 states and the District of lumbia that have statutes dealing specifically with sexual ense. Thus far, nearly all the laws adopted have defined the offender as a "psychopath," and have regarded him as men- ly ill or as mentally defective. The committee cautions against use of the appellation psychopath, in the law on several ounds. There is still little agreement on the part of psychi- ists as to the precise meaning of the term. The committee lieves that in statutes the use of technical psychiatric terms ould be avoided whenever possible. Psychiatric knowledge and minology are in a state of flux. Once having become a part public law such a term attains a fixity unresponsive to newer entific knowledge and application. Although the framers of acted legislation, aimed at the sex offender, recognize that offense may be a symptom of a kind of mental disorder, y have failed in nearly every instance to lift the recommended ocedures of trial and disposition out of the traditional crim- l process. In such procedures the psychiatrist continues to be nfined to a precarious definition (what is a psychopath), as he in most criminal procedures, and it does not seem likely at under such circumstances the psychiatrist can hope to bring fullest measure of understanding to our courts.

SEX OFFENSE AS MENTAL ILLNESS

The unlawful sexual act may be recognized as a surface symptom of a more profound psychic disturbance. In fact, the symptom may be less significant than other pathologic features of the total personality which are more often not detected without psychiatric investigation. Only the surface manifestation attracts attention because it is unlawful and punishable. If further investigation is carried out and the inner disturbance assessed, the symptom attains a new meaning and the law then may regard the act as that of an irresponsible person with a kind of mental illness. It is clear that in the legal process we should go beyond the symptomatic illegal act itself and assess the total personality to enable the courts to better achieve the aim of both community protection and individual treatment. Thus it would appear that the psychiatrically deviated sex offender should be regarded as suffering with a mental disorder and the procedure of disposition be by indeterminate commitment as provided by law for persons with mental illness. It is clear that the identification of the psychiatrically deviated sex offender and the estimate of his danger to the community are functions of which the responsibility rests largely on the psychiatric expert. They are not matters best determined singly by the judge or by the jury. The committee proposes that the disposition of the psychiatrically deviated sex offender be properly initiated by the establishment of the diagnosis of mental disorder by expert opinion. Such a diagnosis is dependent upon the following general criteria which singly or in combination should be the guide to the psychiatrist who is required to give an opinion as to the existence of mental disorder.[2]

Repetitive Compulsive Acts.—Repetitive compulsive acts having a (dynamic) pattern of similarity and carried out to the point of community intolerance. Such acts manifest heedless disregard of consequences and seek and attain ultimate expression even if momentary obstacles are encountered.

Forced Relations.—The forcing of sexual relations implies noncompliance on the part of the offended party. Forced relations may be either heterosexual or homosexual.

Age Disparity (Relations Involving One Adult).—This criterion rests upon the legal definition of minority and consent. No uniformity exists in this part of the law. The committee proposes that in remedy the legal status of persons under 21 years of age relating to sexual behavior be clarified. In general, persons under the age of 7 are legally regarded as not responsible. On the one hand this age group stands at the extreme in the scale of age disparity. On the other hand the legal definition of the minor ignores the intervening events of puberty and the large variations in physical and emotional maturity observed in many persons stamped as minors. It may be true that such persons cannot enter into contracts, but many are by endowment and training fully capable of part or exceptionally even full responsibility for sexual behavior. Thus, in the later years of childhood age disparity may diminish to a point of a day or even hours. By the same token in the later age levels the legal concepts of rape and of contributing to delinquency become increasingly untenable. The foregoing comments on the legal status of persons under 21 reflect the committee's need for further study with the help of the legal profession. At best, these are matters which call for considerable research, reinterpretation and application on the part of the legal profession. The committee recognizes that a large number of adults mutually and privately carry out illegal sexual practices with other persons of adult status. These are not to be considered as coming within the purview of the committee's legislative recommendations.

LEGISLATION

The committee is hopeful that our sex laws can be modified to correspond to modern sex knowledge with the aim that justice fit the realities of modern life in keeping with scientific psychological concepts of sexual behavior. The committee believes that there is need for a realistic assessment of the American sex laws that penalize sexual behavior; that some laws should be revised and perhaps some entirely abandoned. In operation our sex laws are harsh, too often nourish corruption and fail to protect the community from persons who are potentially dangerous. At best, they are inapplicable. Moreover, if they were strictly enforced we should be indeed witness to a colossal travesty reaching all levels of American society. Absolute law enforcement would perforce touch about 95% of the total male population. In contrast to the universality of illegal sexual behavior actually only a meager number of persons falls into the law enforcement net to suffer inordinate punishment for the conduct of the many. In one category alone recent statistical studies bring to light that 6 million homosexual acts take place each year for every 20 convictions. In the area of extramarital copulation the frequency to conviction ratio is nearly 30 to 40 million to 300.

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[1] A poll of the GAP membership elicited a preference response almost evenly divided between the terms "disordered" and "deviated." A more definite preference was expressed favoring the term "psychiatrically" as a modifier.

[2] It is well to point out that during puberty and adolescence libidinal drives may momentarily overwhelm defenses and find outlet in an isolated act, which may be unlawful and punishable. In this age period such acts do not always portend a bad prognosis; many of these youthful offenders attain permanent mastery of their impulses toward socially and legally unacceptable forms of sexual expression.

There is great variance of the sex laws with actual human sex behavior. Such sex laws are uniform in that they permit the judge to decide the issue of delinquency on the basis of antecedents in archaic common law which are even further removed from the realities of modern life and human behavior. In some American courts the conviction of a defendant can be secured on testimony produced by an immune witness, himself tainted by participation in the illegal act.[3]

Herein is set forth a tentative proposal intended for the eventual formulation of a model for legislation applicable to sex offenders. Such legislation anticipates the participation of psychiatry in the disposition of the sex offender, having the basic aims (1) to provide realistic community security and (2) to treat and if possible restore the sex offender to social capacity.

In 1933 the Commonwealth of Pennsylvania enacted an act which permits a trial judge to require a psychiatric examination and report on any person convicted of any offense, and if such a report conveys that the defendant "though not insane is so mentally ill or mentally deficient as to make it advisable for the welfare of the defendant or the protection of the community that he or she be committed to some institution other than a county prison, workhouse, or penitentiary, the trial judge shall have the power by virtue of this act to commit such defendant to any state or county institution provided for the reception, care, treatment and maintenance of such cases or similar mental cases, in lieu of a sentence . . . and to direct the detaining of such a defendant in such institution until further order of the court." This law provides examination only for convicted individuals.

The act provides for appeals that apply in the same manner and have like effects as if the defendant were sentenced to a prison. The committee regards this law as applied to convicted offenders as commendable for both simplicity and comprehensiveness. If employed it is adequate to deal with the sex offender. It satisfies the aims of both community protection and for treatment of the sex offender under conditions favorable to restoration. If the offender is curable he can be eventually released to society; if not, he should never be released. Thus, commitment achieves what term prison sentences never achieve.[4] It should enable the psychiatrist to function more intelligently for the court, unencumbered by dubious diagnostic expedients. The law places in the hands of the trial judge the responsibility for its application. For the convicted offender this act provides for commitment in lieu of sentence, and implies that a diagnosis of mental disorder is a defense for a criminal charge. Furthermore, in effect, the act places no limitation upon the len of time for which the defendant may be held by court or in an institution for treatment of mental cases. This law h the virtue of not representing legislation aimed with bias a particular groups of offenders.[5]

The committee recommends that the examination of such defendants be made by one or more psychiatrists officially to a court clinic, or employed by a state hospital system or the absence of these by two psychiatrists appointed by the as a commission. To the basic qualifications of licensure t committee recommends that any expert meet the a minimum qualifications of no less than five years exclu practice in the diagnosis and treatment of mental disorders. T court should not be bound by the psychiatrists' findings. In ke ing with the above suggested legislative device the commit believes that selected sex offenders make satisfactory pro tioners capable of utilizing psychiatric treatment. The comm tee is unreserved in its conviction that the committed offender should be actively treated in a non-penal i The sexual offender will not loom large numerically as a h pital problem. The stigma of sex offense officially attached the sex offender committed to a penal institution creates formidable obstacle to treatment. At best consistency that if we diagnose the sex offender as mentally disordered should be treated as a mental case in a facility for that pose. The committee can visualize only one avenue of mise: commitment to a penal institution is feasible only in t event that all sentences are indeterminate and penal institutio are transformed into realistic treatment facilities.

RECOMMENDATIONS

The committee recognizes that the recommendations to f low achieve for the adult sex offender essentially the same tre ment now extended to children in juvenile court jurisdictio The committee recommends that any legislation aimed at t control and treatment of sexual behavior contain the followi elements:

Essential Element of Definition.—The essential element definition is the existence of mental illness as diagnosed by pert opinion and as satisfying the existing legal definition of same.

Basis of Jurisdiction.—The basis of jurisdiction should dep on whether there is a charge or a conviction for criminal offe

Initiation of Proceedings.—In the case of a person accu of a sex offense, upon petition and affidavit of any person upon its own initiative the court may order a psychiatric amination and report. In the case of a convicted first sex offer a psychiatric examination and report should be mandator

Tribunal and Proceedings.—The court should be one of rec and there should be no jury participation. Private hear should be discretionary with the court and hearings should held within thirty days of the petition or of the conviction.

Medical Examination and Qualification of Examiners.— psychiatrists employed by the court should be qualified by least five years of exclusive practice in the diagnosis and tr ment of mental diseases. The court should not be bound the psychiatric findings.

Effect of Commitment on Criminal Proceedings.—In the c of the convicted offender, commitment shall be in lieu of sentence to a penal institution. In the case of the accused fendant the diagnosis of mental illness shall constitute a defe to the crime.

Disposition.—The court shall have the discretionary po to commit the convicted offender as a mentally ill person t hospital facility in lieu of a sentence or to release the offe subject to special conditions of probation. In the case of accused defendant having been found mentally ill by psychi examination the commitment may be processed through the provision of the law applied to the mentally ill.

Proceedings for Release.—Proceedings for release shall initiated by the superintendent of the institution. Discharge be only by approval of the court and under conditions erally governing release of mental patients. It shall be the of the superintendent to cause to be made a psychiatric exa nation and to report the same to the court at least every months after admission of the offender to his facility.

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3. Kinsey, A. C.: Personal communication.

4. The Criminal Law and Sexual Offenders: Report of the Joint Committee on Psychiatry and the Law, London, British Med. Assoc., 1949, pp. 24: " . . . in regard to sexual offenders, punishment without treatment is not likely to have a beneficial effect; indeed, it can make these offenders worse, and thus more likely to repeat their offences. In a high proportion of cases imprisonment without treatment may have consequences to the community even more dangerous than to the offenders themselves."

5. It should be noted that the Pennsylvania legislature has deemed this act inadequate for Pennsylvania and in 1951 adopted special legislation dealing with offenders.

6. The argument of opposition to the treatment of sex offenders in state hospitals rests on the contention that state hospitals possess inadequate facilities in both housing and personnel, that sex offenders do not mix well with others, that treatment is unsystematized and difficult, and that there are no criteria of recovery.

MISCELLANY

he following excerpts are from the June 28, 1955, issue of Congressional Record. While it is not the normal procedure THE JOURNAL *to publish material of this type, it is believed iis instance that many members of the medical profession ld like to read the statements offered by some of the ibers of the House.*—ED.

5 AMENDMENTS TO THE UNIVERSAL ITARY TRAINING AND SERVICE ACT

R. VINSON. Mr. Speaker, I call up the conference report on bill (H. R. 3005) to further amend the Universal Military ning and Service Act by extending the authority to induct ain individuals, and to extend the benefits under the Deents Assistance Act to July 1, 1959, and ask unanimous ent that the statement of the managers on the part of the se may be read in lieu of the report.

he Clerk read as follows:

STATEMENT

e managers on the part of the House at the conference on the ding votes of the two Houses on the amendments of the Senate to ill (H. R. 3005) to further amend the Universal Military Training Service Act by extending the authority to induct certain individuals, o extend the benefits under the Dependents Assistance Act to July 1, submit the following statement in explanation of the effect of the a agreed upon by the conferees and recommended in the accompanyonference report:

e Senate amendment struck out all after the enacting clause in the e bill, made several changes in the regular draft act and added separate title the extension of the Doctors Draft Act together with pecial pay for physicians and dentists.

ere were several major and some minor differences between the e version with respect to the extension of the regular draft law he amendment as passed by the Senate.

EXTENSION OF AUTHORITY TO DRAFT INDIVIDUALS UNDER THE REGULAR DRAFT

Both the House bill and the Senate amendment provided for a 4-year sion of the regular draft.

Both the House bill and the Senate amendment provided for a 4-year sion of the Dependents Assistance Act.

The House bill provided that individuals who enlist in National d units prior to attaining the age of 18½ would not be liable for tion beyond the age of 26. Under existing law such individuals are up to age 35. The Senate amendment makes such individuals for induction up to age 28. This is the first significant difference en the House bill and the Senate amendment. The House managers d to this portion of the Senate amendment.

The House bill contained an amendment which reduced the age of ity from age 35 to age 26 for an individual who was deferred for cal reasons as a result of being rejected by an Army examining n or induction station. The Senate amendment struck out this age from the House bill and thus continues in effect the present which makes these individuals liable up to age 35. The House managreed to this portion of the Senate amendment.

Both the House bill and the Senate amendment contained language e effect that the supply of an agricultural commodity may not be into consideration either in denying or granting deferments. The te amendment merely rearranged the wording of the House bill out changing the effect of the House bill in this respect. The House gers agreed to this portion of the Senate amendment.

The next difference between the House bill and the Senate amendinvolved the amount of service necessary to qualify for exemption induction on the basis of prior service. The House bill provided an individual who served honorably on active duty after September 940, for a period of 6 months or more in the Armed Forces (or 24 hs in the Public Health Service) would not be liable for induction t upon a declaration of war or national emergency by the Congress. Senate amendment provided that an individual shall be considered as fied for exemption if he served on active duty for a period of 1 year Armed Forces unless he was discharged for the convenience of the rnment after having served 6 months or more. The Senate amendalso added the Coast and Geodetic Survey to the 2-year active-duty rement to qualify for such exemption. The House managers agreed is portion of the Senate amendment.

The Senate amendment provided for the exemption from registration induction of members of the Reserve components of the Armed s while employed as veterinarians of the United States Department griculture. This same provision was also applied to prior-service ptions by another subsection of the Senate amendment which prothat no member of a Reserve component "who has been employed as a veterinarian by the United States Department of Agriculture for a period of 24 months from and after the date of enactment of this paragraph shall be liable for induction except in time of war or national emergency declared by the Congress."

The House managers objected to this portion of the Senate amendment on the grounds that these civilian employees of the Department of Agriculture are not serving in such employment as members of the uniformed services. The Senate managers receded from their insistence on this portion of the Senate amendment.

8. The Senate amendment also added a new exemption from induction of any person who, subsequent to June 24, 1948, served on active duty for a period of not less than 18 months in the armed forces of a nation with which the United States is associated in mutual defense activities if the country of which such person is a citizen grants the same privilege to citizens of the United States. A similar proposal was contained in H. R. 9007 which passed the House in the last Congress, but did not pass the Senate. The House managers agreed to this portion of the Senate amendment.

EXTENSION OF THE DOCTORS DRAFT ACT

The Senate amendment added a separate title to the bill as it passed the House under which the Doctors Draft Act would be extended for 2 years, and entitlement to the additional extra pay for doctors would be continued for doctors entering on active duty prior to July 1, 1959. In addition, the Senate amendment contained an amendment to the Doctors Draft Act which provided that an individual after July 1, 1955, who had attained the 35th anniversary of the date of his birth and applied for a commission in one of the Armed Forces as a physician or dentist, and who was thereafter rejected for such commission on the grounds of physical disqualification, would no longer be liable for service under the doctors draft law.

In extending the Doctors Draft Act the Senate amendment made no change in the maximum age of liability of induction for physicians and dentists which, under existing law, is 51 years of age.

The House managers insisted that the age of liability for doctors under the Doctors Draft Act be substantially reduced from the present age of 51. The House managers attempted to reduce the age of liability to 41 on the grounds that this would provide physicians to take care of the medical needs of the Armed Forces for the next 2 years so long as no medical-school graduates are deferred during the next 2 years for purposes of residency training. Failing in this effort, the House managers attempted to reduce the age to 42, 43, 44, and 45, but in each instance the Senate managers insisted that the age of liability remain at 51. The Senate managers insisted that the availability of physicians numberswise was not the sole criterion with regard to the procurement of physicians. The Senate managers likewise insisted that any age below 50 with regard to the Doctors Draft Act would fail to take into consideration any upward revision in the strength of the Armed Forces during the next 2 years. The Senate managers were of the opinion that members of the uniformed services are entitled to the best possible medical care and that such medical care would not be available unless more experienced physicians and specialists served side by side with young men who have recently completed their internships. The House managers fully concur in the absolute need for experienced physicians for our Armed Forces. The Senate managers insisted that specialists, in particular, would not be available in adequate numbers if the draft age were reduced below 46. In view of the urgency of the situation and the insistence of the Senate managers, the House managers agreed to a maximum draft age under the Doctors Draft Act of 46. In other words, no doctor will be liable for service under the doctors draft law after attaining his 46th birthday.

The House managers, however, after agreeing to a draft age of 46 for doctors, insisted that any doctor over the age of 35 who had applied for a commission as a physician or dentist in one of the Armed Forces and had been rejected at any time, or is hereafter rejected, on the sole basis of a physical disqualification should no longer be liable for service under the doctors draft law. The Senate managers agreed to this amendment to the Senate amendment.

The managers of the House and Senate likewise discussed the situation with regard to optometrists. Both the House and Senate managers are conscious of the fact that the Department of the Army are using optometrists in their professional capacity as enlisted men. It is the opinion of both the House and Senate managers that the armed services should, if they utilize optometrists in their professional capacities, offer such individuals commissions. In other words, if an optometrist who is inducted under the regular draft act is utilized as an optometrist he should be offered a commission commensurate with his professional attainment.

There was no disagreement between the House and Senate managers with regard to the continuation of existing law, which authorizes additional pay for doctors serving on active duty.

CARL VINSON,
OVERTON BROOKS,
PAUL J. KILDAY,
DEWEY SHORT,
L. C. ARENDS,
Managers on the Part of the House.

MR. VINSON (interrupting the reading). Mr. Speaker, in view of the fact that the report and the statement of the conferees have been printed in the *Record* for the last 2 days, I ask unanimous consent that further reading of the statement may be dispensed with and that it be printed in the *Record* at this point.

The Speaker pro tempore. The gentleman from Georgia is recognized for 1 hour.

MR. VINSON. Mr. Speaker, the conference report before the House deals with four very essential laws affecting our national security. These laws are the basic props of our national defense and must be passed before July 1—2 days hence.

What are these laws?

First. It extends the authority to induct men into the Armed Forces as regular registrants under the regular draft law.

Second. It extends the Dependents Assistance Act—the act under which enlisted personnel receive additional allowances from the Government for their dependents.

Now both the Dependents Assistance Act and the Draft Act are to be extended for 4 years.

Third. The conference report provides for the extension of the Doctors Draft Act for 2 years, and

Fourth. It provides for the continuation of special pay for doctors who enter on active duty prior to July 1, 1959.

Now, Mr. Speaker, last February 8, this House passed, by a vote of 394 to 4, the regular draft law.

In this same bill we passed the extension of the Dependents Assistance Act.

The House Committee on Armed Services did not attach the extension of the Doctors Draft Act to the regular draft, but instead reported a separate bill, H. R. 6057 to the House.

This report was filed on May 10, and on that same day I requested the Rules Committee to hold a hearing on the bill H. R. 6057 in order that we might debate this matter before the House in the Committee of the Whole.

We appeared before the Committee on Rules on May 17.

On June 17, 4 months and 9 days after the House passed the draft extension bill, the Senate passed H. R. 3005, the extension of the regular draft act with an amendment which extended the Doctors Draft Act for 2 years.

This bill was passed on June 17, 1 month after I had appeared before the Rules Committee to request a rule on a separate bill to extend the Doctors Draft Act. On Monday, June 20, I asked unanimous consent to take from the Speaker's desk H. R. 3005, disagree to the Senate amendments, and agree to the conference requested by the Senate. This was granted, and thereafter we held a full and free conference with the Senate on June 21, and as a result filed a conference report in the House.

Now let us see what the conference report provides.

It extends the regular draft act for 4 years until July 1, 1959.

It also extends the Dependents Assistance Act for 4 years until July 1, 1959.

And it makes some changes in the existing draft act.

As you know, under the law young men can enlist in the National Guard prior to attaining the age of 18½. They are deferred from induction so long as they participate in the National Guard. But remember that under the present law, anybody deferred for any reason remains liable up to age 35. And this applies to National Guard men and any other person who gets a deferment. So the House bill provided that these individuals would not remain liable after they passed the age of 26.

The Senate bill accepted this principle of a reduction in the age of liability, but raised the age to 28.

Now the next question involved the amount of prior service necessary to qualify for exemption as a veteran under the draft law.

The conferees agreed that if a person was discharged with 12 months of service, or 6 months of service if discharged for the convenience of the Government, he would be classified as a veteran.

The Senate amendment provided a new exemption for persons who served on active duty for a period of not less than 18 months in the Armed Forces of a nation in which the United States is associated in mutual-defense activities so long as that country grants reciprocal privileges to American citizens residing in such foreign countries. Since the House passed a similar proposal last year, we agreed to the Senate amendment.

To sum up, let's see what kind of a draft law we will have after the conference report becomes law.

First. All young men attaining the age of 18 will still be required to register.

Second. They will not be liable for induction until they reach the age of 18½ and even then they can't be inducted if there is any person registered in their local board who is available and is over the age of 19. Today they are drafting men at the age of 21.

Third. Young men will still be deferred to complete high school or go to college.

Fourth. The exemptions will remain the same.

Fifth. Young men will still be able to appeal their classifications. The appeal processes remain the same.

Sixth. Young men will still be able to join the National Guard prior to attaining the age of 18½ and will be deferred from the draft so long as they satisfactorily serve in the National Guard up to the age of 28.

Seventh. Any man discharged for the convenience of the Government after serving 6 months on active duty will be considered a veteran and will be exempt from induction except in time of war or national emergency. All others discharged after completing 12 months or more of active service will be considered a veteran and will be exempt from induction except in time of war or national emergency.

Now that's the picture of how the new draft law will operate.

That brings us to the Doctors Draft Act which was added as a separate title by the Senate to the bill that extended the regular draft act.

The House Armed Services Committee reported a doctors draft bill to the House last May 10, as I have already mentioned. We appeared before the Rules Committee on May 17 for a rule. In the meantime, I discussed the matter with many Members of the House and with officials from the Department of Defense to determine whether we could possibly reduce the draft age of doctors, and had considerable correspondence with the chairman of the Rules Committee.

After going over the figures carefully with representatives of the Department of Defense; after carefully studying the testimony; and after going over the statistics with people from Selective Service, I asked the Armed Services Committee to authorize me to offer an amendment to the bill which we had reported to the House to reduce the age from 51 to 45 insofar as physicians and dentists are concerned.

The committee agreed to such an amendment.

Mr. Speaker, I have just as much respect for the medical and dental professions as anyone else. None of us like the necessity of drafting doctors, but we all know that the health of the armed services comes first.

We know that we cannot in good conscience extend a law to draft the young men of our Nation without assuring them the best possible medical care and that is the sole purpose of extending the law.

The Senate conferees were insistent that the age of liability for physicians and dentists remain at 51 as it is today.

We agreed upon a draft age of 46. No physician or dentist may be drafted under the doctors draft law after he attains the age of 46.

In other words, the Senate conferees agreed to come down 5 years from the present law.

Now let me give you the reasoning behind the draft age of 46.

There are just so many physicians in this country who are liable for service who will be graduating from medical schools and will complete their internships within the next 2 years.

In fact, there are only 6,691 physicians in this category.

Now the requirements for the uniformed services for the next 2 years amounts to 7,771, so if we took every single available medical school graduate during the next 2 years we would still be short 1,152 from our requirements.

But, in addition, we have got to think about the future.

If we take all our available medical school graduates for the next 2 years, then we will have no source of experienced physicians to call upon who will be liable under the regular draft act 2 years from now when the doctors draft law expires.

Some 1,800 of our available medical school graduates will be deferred to take residency training so that they can become specialists or more experienced physicians.

Now we suggested to the Senate conferees that we take all of the medical school graduates and not defer any one for residency training. When we did this we fully realized that in offering that suggestion we were creating a problem for ourselves that might be insurmountable 2 years from now.

The Senate conferees refused to go below a draft age of 46. They said that a draft age below 46 would not assure the ned services of experienced physicians and specialists after : doctors draft law expires. We knew this was true.

They said that if we take all of the medical school graduates ring the next 2 years and just a hand full of special registrants, will have a medical service in the Armed Forces made up ›stly of young men who have just completed their internships. other words, most of the doctors treating our servicemen ›uld be young, inexperienced doctors. We knew this would be : fact.

And finally, the Senate conferees said that if we limited the aft age for physicians to a point where it is barely able to ovide physicians even by taking all of the medical school aduates for the next 2 years and deferring none, that we ›uld be in serious difficulty particularly if there was any in- :ase whatsoever in the size of our Armed Forces in the next years.

We know how unsettled world conditions are and that no .e can say with certainty what the size of our Armed Forces ll be in the future. Last week's incident in shooting down a avy plane in the Bering Sea is evidence of unsettled conditions at daily confront us.

Now a draft age of 46 will give us enough physicians to fill : requirements of the uniformed services for the next 2 years d at the same time will permit us to defer enough medical hool graduates so there will be an adequate source of experi- ced physicians available still within the draft age 2 years from w when the doctors draft law expires.

Bear in mind that any person deferred for any reason since ne 19, 1951, remains liable up to age 35 under the regular aft law. This is the way we will get physicians 2 years from ›w when the doctors draft law expires.

The Senate did agree to a provision which was contained in : bill we reported to the House that any physician or dentist ıo applied for a commission at any time in the medical or ntal corps and who was rejected for physical reasons would ıt be liable under the doctors draft law after attaining the age 35. This means that if a man tried to obtain a commission the medical corps of the Army, for example, and was rejected r physical reasons and he is now 35 years of age, he is no nger liable under the doctors draft law.

Now it has been argued by some that there would be no need r a doctors draft law if we stopped treating dependents of rvice personnel and others who are entitled to medical care ›m service doctors in accordance with law.

Let us analyze this and see what the facts are.

Under the law medical care is authorized for civil service ıployees, foreign service employees, employees of the Bureau Indian Affairs, certain nationals of foreign governments, sea- en, and certain beneficiaries of the Veterans' Administration.

And in addition to that, medical care is authorized for the :pendents of service personnel.

These authorizations are based upon law. But let us see if ese laws are being abused.

In 1954 the beds occupied by patients in hospitals and in- :maries under the jurisdiction of the Department of Defense /eraged 48,000 daily. Of this number, only 2,400 were not :rvice personnel, retired personnel, or dependents of service :rsonnel.

Of this 2,400, practically all, with the exception of veterans, ere serving outside the continental limits of the United States a civilian capacity or were employed by the Department of efense in a remote area of the United States where no civilian edical facilities are available.

Are we going to ask civilian employees to work overseas with .e Department of Defense and not assure them of an adequate merican standard of medical care?

Are we going to ask civilian employees of the Department of efense to work for the Federal Government in remote areas : the United States where the only doctors available are service ›ctors and refuse them the right to be treated by service ›ctors?

We have traditionally provided medical care for the dependents of service personnel and retired personnel.

I can think of nothing that would do more to destroy the morale of our Armed Forces than to deny the dependents of our service personnel medical care on a space and facilities available basis.

In other words, if the hospital is not there or the facility is not there, or it is overcrowded by service personnel, the dependent cannot receive treatment.

All of the dependents and service people know this.

But if there is space and if the facility is available, then these dependents are entitled by law to medical care. If the Congress wants to take away this privilege, it will have to be done by legislation.

Now widows and dependent children of deceased personnel of the Armed Forces are also entitled to medical care. But the actual number who benefit by this entitlement is a different matter.

The number of these people who occupy beds in hospitals and infirmaries is considerably less than 1 per cent of the total average occupied by patients in hospitals and infirmaries under the jurisdiction of the Department of Defense.

Our committee has gone into the matter very thoroughly. As a matter of fact, I asked the Department of Defense to give me an estimate as to the number of uniformed physicians who are considered to be devoting a major portion of their duties to the treatment of individuals other than Armed Forces personnel and dependents of armed services personnel.

I was advised that if all medical care were abolished for all personnel now entitled to medical care from the armed services other than armed services personnel and their dependents we would only be able to eliminate about 40 uniformed physicians throughout the entire Armed Forces. That is veterans, civil-service employees, foreign-service employees, seamen, foreign nationals, and employees of the Bureau of Indian Affairs.

If we abolished all dependent medical care for the members of the armed services in the United States, we would only be able to reduce the number of uniformed physicians in our armed services by approximately 581.

I want to emphasize this point:

If we abolished all dependent medical care in the United States and all medical care for all civil-service employees and veterans who are admitted to the service hospitals in the United States and overseas, we would only reduce the call of uniformed physicians for our armed services by 621 physicians.

Now some of you may ask, Why do we not use more civilian physicians?

Well, the armed services do employ 311 civilian physicians in industrial dispensaries, ordnance depots, and places of that nature. There is no limitation on the number of physicians that may be employed by the Department of Defense—but a practical limitation is contained in the inability of the armed services to hire civilians under existing civil-service wage scales. It is a little difficult to compete with the net income of the average physician which is now in the neighborhood of $15,000 annually.

Now someone might say, Well we wouldn't have to take these older physicians if we took the younger doctors who have already served in the Armed Forces.

I am not going to support any program that requires us to force a doctor who is a veteran under the law to serve his country twice when there are many doctors in this country who are under the age of 46 who have never served a day in their life. The doctors who are coming in during the next 2 years will be doctors who have never served on active duty, and they are now in Priority III.

Mr. Speaker, we have looked at this proposition from every angle. And distasteful as it may be, discriminatory as it may be, disturbing as it may be, inconvenient to the doctors as it may be, nevertheless the servicemen of our Nation are entitled to the best medical care we can provide. They will not get it unless you pass this conference report.

We cannot have adequate national security without proper medical care, and the only way we are going to get proper medical care for the next 2 years is by extending the Doctors Draft Act for 2 years.

Two years from now there should be enough physicians graduating from medical school who are nonveterans, plus those who have been deferred to take specialty and residency training to meet the needs of the Armed Forces if the strength of the Armed Forces stands where it is today.

For the next 2 years, there is no other solution to this problem but to pass this conference report extending the doctors draft law for 2 years.

The law I am asking you to extend gives the President the authority and the discretion to issue special calls under such regulations as he may prescribe as to how many doctors will be called to meet the needs of the services.

Now let me get this point across. The doctors draft law is an authorization law. If the facts change and no longer warrant its implementation, then the President has the authority to modify or change the calls to meet the conditions as they arise.

I have confidence in the President to administer this law in such a manner as to avoid arbitrary calls on physicians and dentists, and at the same time to assure the armed services adequate medical care.

The issue here is simple.

We either pass this conference report and assure an adequate source of medical and dental personnel for our Armed Forces and inconvenience some physicians and dentists who have never served a day of active duty in their life, or we let the convenience of a few physicians and dentists jeopardize the health of our armed services and the national security.

I have received telegrams from every dental and medical society in the United States, as I am sure every one of you have. They all oppose the draft law for doctors.

Not a single one of them, however, can assure the Armed Forces of an adequate source of physicians and dentists without the doctors draft law.

And as far as I am concerned, when it comes to a choice between the health of our Armed Forces and the desires of the American Medical Association and the American Dental Association, I shall elect to assure the members of our Armed Forces that they will receive the best possible medical and dental care.

We either vote to give to the men we draft or the men who volunteer the best in medical care, or we bow to the dictates of the American Medical Association.

I have before me a telegram from the American Medical Association urging that this conference report be recommitted.

Now what will you accomplish if you recommit this conference report.

Today is the 28th of June. These four important laws, the very props of the defense of the Nation, expire on midnight June 30—60 hours from now.

What would be the consequence if this conference report is recommitted and no agreement can be reached?

Everything stops on midnight June 30. The draft stops; the dependent wives and children will have their checks stopped and the whole machinery of these four main props of the defense of the Nation will be brought to a halt.

In a letter from General Hershey, dated June 24, he said:

> It is estimated that, should the Congress fail to extend the induction authority prior to July 1, 1955, at least 50 percent of the 10,000 men already called for induction in July would be affected to the extent that their orders for induction would have to be canceled.
>
> With respect to the effect of a failure to extend the so-called Doctors' Draft Act prior to its scheduled termination date on July 1, 1955, it should be pointed out that immediately upon termination of this act all actions of the Selective Service System with respect to classification and selection of physicians and dentists would be rendered void.

I ask you not to jeopardize the security of the Nation in such a manner.

Mr. Miller of Nebraska. Mr. Speaker, will the gentleman yield for a question? I wanted to ask the gentleman a question about the ratio of physicians in the Army including the dependents that they take care of as compared with the civilian population. Can the gentleman give us any information on that?

Mr. Vinson. I do not have that information.

Mr. Miller of Nebraska. I understand that the ratio is about 4 physicians to 1,000 in the Army, and in the civilian population the ratio is 1 to 1,200 people in the United States.

Mr. Jonas. I want to ask the gentleman about the acti
the other body in striking out an amendment I proposed c
floor and which was agreed to on the floor at the time th
was originally passed by the House.

Mr. Vinson. That is the provision with reference to a
who had been before the Board and rejected because of a
cal disability. He cannot be called back. That is in the conf
report. A man who has been passed on and to whom a
mission has been refused because of a physical disability.
is the end of it—he cannot be called back.

Mr. Kilday. Mr. Speaker, if the gentleman will yiel
gentleman from Georgia, of course, has correctly stat
provision with reference to doctors who have previousl
denied a commission on account of physical disability,
believe the gentleman from North Carolina [Mr. Jon
referring to the amendment adopted on the floor.

Mr. Jonas. That is correct. The amendment proposed
and which the House adopted.

Mr. Kilday. That is the regular draft extension whic
adopted by the House under which a man who had been r
at an induction station could not be called back.

Mr. Jonas. That is correct. The amendment was put
bill on the floor and provided that if a registrant sho
rejected at an induction station solely on the grounds of p
disability, his liability for service would expire at the age
Why did the conferees agree to the elimination of that pr
after the House, following considerable debate and th
consideration, affirmatively approved it?

Mr. Kilday. Mr. Speaker, if the gentleman will yiel
particular provision is not in this bill. The conferees of th
body were adamant in their opposition notwithstanding t
sincere effort to retain the provision because it was a pr
put in on the floor of the House. We did not prevail
and that is not in this bill.

Mr. McCormack. I congratulate the gentleman from
on the able and powerful speech he has made. It is a
which should convince the great majority of the member
the House, and I join with the gentleman from Geo
urging that the conference report be agreed to.

Mr. Dixon. Mr. Speaker, during the hearings on the ex
of the draft law in the Senate the junior Senator from
Wallace F. Bennett, indicated that, if necessary, he wou
pose an amendment to section 16 (g) of the Universal
Training and Service Act, as amended, for the purpose of
ing the exempt status of those persons called to serve as m
of the Church of Jesus Christ of Latter-day Saints—Mor
assigned to serve in the missions of the church.

The problem to which he sought solution has arisen
some local boards and State administrators have failed to
nize the IV-D status of these ministers—despite the fact t
National Director of Selective Service has always consider
the young men of this church, who are ordained as m
and assigned to serve in the missions of the church, were
the definition of ministers of religion as defined in section
of the act. In those instances where the local and State
have failed to recognize the true status of these minist
Director has had to rely on appeal procedure in order
the proper classification.

After hearing Senator Bennett's explanation of the pr
and General Hershey's testimony to the effect that he
ways regarded these ministers as included in the definit
section 16 (g), the Senate Armed Services Committee con
that the amendment proposed by Senator Bennett w
necessary.

The committee made the following report of the pr
amendment:

> Exemption of ministers of the Church of Latter-day Saints (Mo
> The junior Senator from Utah, Hon. Wallace F. Bennett, a
> before the committee in connection with a possible amendment to
> 16 (g) (1) of the Universal Military Training and Service Act to spe
> insure the exemption of those persons called as ordained ministers
> Church of Jesus Christ of Latter-day Saints (Mormon) and assig
> serve in the missions of the church. Assurance given in writing

tor of Selective Service to the Senator from Utah reflected that such
dment was unnecessary inasmuch as Selective Service considers that
individuals are already entitled to IV-D classification under existing
The letter referred to and a letter from the Assistant Secretary of
ise for Manpower and Personnel appear in the printed hearings.

his report, coupled with Senator Russell's statement in the
ord of June 16, 1955, to the effect that the committee ex-
sly considers any clarifying amendment unnecessary inas-
h as these ministers are in fact already entitled to IV-D
is under existing law clearly defines the position of our col-
ues in the Senate.

should like to ask the distinguished chairman of the House
ied Service Committee if he and his committee share that
iion in the light of General Hershey's testimony and the con-
atory comments of the Senate committee?

R. VINSON. Mr. Speaker, let me say to the gentleman from
that I concur completely with the report of the Senate
ied Services Committee and Senator Russell's statement that
larifying amendments are needed to the Universal Military
ning and Service Act with regard to the exemption of minis-
of the Church of the Latter Day Saints. It is my understand-
hat these young men are exempt so long as they are ordained
isters and assigned to serve in the missions of the church.
soon as they have completed their work in the missions,
h I understand is 2½ years, the exemptions then cease and
become subject to induction like·all other individuals.

R. SMITH of Virginia. Mr. Speaker, I always hesitate to
issue with the distinguished gentleman from Georgia, my
close and dear friend [Mr. Vincent]. I do not think any
has lived in our generation who has done more for national
nse than the distinguished chairman of that committee, the
leman from Georgia [Mr. Vinson], and I want to take this
rtunity to compliment him on the great service he has
ered to the country.

nfortunately, he is human. All human beings sometimes
e mistakes, and this time it [sic] when he made a bloomer.•It
shame that the House is not permitted to have an oppor-
ty to know what this is all about, but here the House has
deprived of an opportunity to discuss the doctors' draft
eason of this parliamentary maneuver which took place in
her body. The gentleman says that the Committee on Rules
not give them a rule. It is true he came before the Com-
ee on Rules. We were so unconvinced, and so thoroughly
inced that it was wrong, that no rule was granted, and the
ter lay there for some time. Finally, I fixed a date on a
rsday for the final hearing on that bill. The day before the
hearing this little maneuvering went on, and the bill was
ted as a rider to the regular draft bill in another body.
n the chairman advised me that he did not want a rule, so
ule was granted.

hat bill is on the calendar, and if it came to the floor we
ld have an opportunity to find out whether it was right or
ng. But I am going to tell you in the few minutes allotted
and I am sorry it is not more, just what is the matter with
s far as I have had time to see it.

n the first place, it is a thoroughly discriminatory bill. No
r class of citizens in the United States is discriminated
inst and drafted into service simply because of their vocation
ife. I expect I have done more than most members of the
nmittee on Armed Services, because I have read every page
he hearings and I know what I am talking about. There is
ieed for a doctors draft. The evidence in these hearings shows
there is no need for it. It is admitted that there are ample
luates coming out of the medical schools to fill every need.
Health Resources Advisory Committee from the Defense
artment which deals with this subject notified the American
lical Association in December of last year that the doctors
t was not needed and would not be asked for. Subsequently
came in and asked for it. The only reason they could give
changing their minds was that they wanted to defer 1,000
he young doctors for further training and take in old doctors.
t was the only reason. If they would use the young doctors
are coming out of the schools there would be no need for
draft, and the evidence quite clearly shows it.

During the Korean war when people were getting killed and wounded the Army got along fine with 1.6 doctors per thousand. Today, in time of peace, they are asking you for 2 doctors per thousand, more than they used in time of war.

Why do we have this need in peacetime? Here are five reasons:

First. They are treating 1,100,000 civilian employees of the Defense Department.

Second. They are treating all dependents of servicemen.

Third. All retired personnel and dependents.

Fourth. All the personnel of the foreign Embassies.

Fifth. All wards of the Bureau of Indian Affairs.

There will be a motion to recommit this conference report. I am not permitted, under the rules of the House, because I happen to be on the majority side, to make that motion, but I would if I could make a motion to recommit with instructions to strike out the doctors draft, but I am not permitted to do so. My astute friend wants to choke this thing down your throats without ever giving you an opportunity to know what you are doing, or to vote on the direct issue.

Do you know you are drafting American citizens here to treat the personnel of foreign embassies in this country? I asked the chairman of the committee when he was before the Rules Committee: "Do you think it is the right American thing to do to draft an American citizen doctor 46 years old to treat the cook of the Russian Embassy?" That is what you are doing.

Sometimes there are questions of principle; this is a question of principle. I do not care about the doctors, but I do care about the vicious principle involved in this bill.

You are drafting, in the fifth place, doctors to treat all the Indians, the wards of the Bureau of Indian Affairs. Did you know that? How many of the Members knew it? But after all that, since the time the Army notified the American Medical Association that they would not ask for the draft of doctors, since that time it has been decided to reduce the Army by 450,000 men, yet they are still asking for a greater proportion of doctors than they did in the heat of hot war.

Mr. Speaker, are we going to stand for this? Are you going to stand here and push this thing down the throats of American citizens and not voice your protest?

This bunk about its going back to the conference committee and not having a draft bill, I want to say to you I voted for every draft bill that ever came before us. I was one of those who by one vote extended the draft 3 months before Pearl Harbor; so I am not any no-draft man, I voted for every draft bill.

When this bill goes back to conference it can be settled in 15 minutes, and we can bring the doctors draft bill to the floor of the House where we can do the right thing. If you vote for it, it is all right with me, but I insist, and I ask you to stand on the question of principle and not permit yourself to have your mouths closed and your opportunity for consideration denied to you by a parliamentary maneuver such as that with which we are confronted this afternoon.

Talking about these civilian employees of the Army, your drafted doctors in 1948 delivered 42,000 babies for personnel of various and sundry people of the armed services, 42,000 babies. All of that could have been done by civilian doctors under contract. In 1948 they delivered 42,000 babies, but in 1953 the doctors delivered 145,000 civilian babies. Is not that fine?

The answer to the problem is simple, and the chairman of the committee, my dear friend, the gentleman from Georgia [Mr. Vinson] told the War Department in these hearings:

> Now, by the 15th of May you come up here with a plan to treat these civilians through contact with local doctors.

Nothing was ever heard of that. Apparently the armed services simply ignored that demand.

In connection with the conference report, may I say that the House conferees fought valiantly to reduce the age limit. They tried to reduce it to 40; they tried it to 42. They fought valiantly for their position and just as valiantly surrendered and signed the conference report.

I am asking you to send this back. Let them get together over there, and let them do the right thing. Let us also put out a little warning that the House is not going to sit supinely by and have its prerogatives taken away from it and not be given the opportunity to consider a matter than involves as great a principle as anything that ever came before this body.

MR. JUDD. With respect to the motion to recommit, the gentleman said he would not be given that privilege because he is on the majority side. May I say that I tried as a member of the minority side to get the privilege of offering a motion to recommit with instructions to strike out title II. That would give the House a chance to vote on this issue by itself. But I was denied that privilege on my side. So there will be offered by someone else on this side a straight motion to recommit which I hope will pass because it is better than letting the conference report go through in its present form.

MR. DURHAM. Mr. Speaker, I hope, too, that this measure will be sent back to the conferees.

I realize that we have serious considerations at stake, since the Universal Military Training and Service Act expires on June 30. This circumstance, however, is not the fault of this body, since the House passed the bill extending the draft on February 28, with no thought of including the doctors draft extension in the basic draft legislation. Now, the present difficulty arises because the Senate saw fit to tack on to the draft bill a new title, not previously considered by the House, effecting the extension of the Doctors Draft Act and other related matters.

I am definitely opposed to such a legislative procedure. The doctors draft legislation is a highly important and controversial matter, which affects the welfare and health of the entire population of the United States. This measure could have been considered in the House as a separate piece of legislation in the usual way and in ample time, had not the other body combined the two pieces of legislation.

The Doctors Draft Act was a necessity born of an emergency. I have been opposed to it all along because it is "class" legislation and as such is not the American way of doing things. I went along with its original enactment and subsequent extensions, however, because I felt it was necessary during the Korean crisis. Now we have reduced our Armed Forces and I seriously doubt the wisdom of continuing this legislation which we all frankly admit is discriminatory.

From the evidence produced at the hearings on the doctors draft extension, and from my examination and study of this whole subject, I am convinced that if the armed services utilized all the medical skills and personnel available, and effected a better distribution of physicians and skilled medical personnel, we would not need to enact this class legislation. I know personally of doctors now classified as surgeons who are being used for nothing more than bandaging surface wounds and administering cathartic pills. These ministrations could be carried out by trained and available personnel if proper organization and planning are brought to bear on the subject.

There is no question but that all of us want to take care of the health and welfare of our men in the armed services and their dependents, but I believe this can be adequately provided for in the basic draft law if applied to doctors and dentists as to all other persons, without again inflicting class legislation on a particular occupational group.

The conflicting testimony on the necessity for drafting doctors and dentists before both House and Senate committees poses some grave questions as to the advisability of continuing this draft of specialized personnel for 2 years longer.

Dr. Frank B. Berry, Assistant Secretary of Defense, Health and Medical, told the Senate committee that—

> We have today slightly more than half of the total number of medical officers authorized for the regular corps of the three services. * * * In addition we have only a handful of career medical and dental Reserve officers on active duty.

This last statement points up the urgent need for the Depar ment of Defense to formulate a determined program to attra and retain career medical personnel on a voluntary basis.

Earlier in the Senate hearings Dr. Reuben R. Chrisman J representing the American Medical Association, called attenti to the figure announced by the Secretary of Defense for t planned military strength of the country, this figure bei 2,900,000. By direction of the Secretary, the authorized phy cian ratio is 3 doctors per 1,000 troop strength, which wou call for 8,700 doctors. Dr. Chrisman pointed out, however, th in earlier hearings before the House committee, the physici strength was shown to be 10,360 as of March 31, 1955. Es mated losses during the next 2 fiscal years were shown to 7,424, leaving physicians on duty in the Armed Forces to t number of 2,936. Thus the number necessary to bring physici strength up to maximum authorization would be 5,764, althou the Department of Defense claims a requirement of 6,926 placement physicians, which includes 845 for the Public Hea Service. This number would provide a greater ratio than doctors per 1,000 troops, and the inclusion of 845 docto through draft, for Public Health Service raises a grave questi of propriety.

In the face of this testimony, there is the report of the Hea Resources Advisory Committee of the Office of Defense Mob zation in January, 1955, which states that if mobilization c tinues at presently announced levels, it will be possible to ma tain the present physician staffing ratios of the armed servi with the new graduates of medical schools who are liable service under the basic draft act.

The task force of the Hoover Commission is of this sa opinion. The task force also recommends that the doctors dr law not be extended and expressed the belief it was unfair principle and has in the past been abused in administration.

Testimony from the American Dental Association called tention to the conflicting estimates of the number of de officer replacements needed by the Armed Forces and affirn its belief that dental graduates subject to the draft could v effectively constitute the main source of dental officer repla ments, especially so if the present dental officer staffing patt is improved.

Serious questions have been raised in testimony before committee indicating the need for the Defense Departmen launch programs to attract to the services career physicians specialists on a voluntary basis, to obtain services of civil doctors in areas where they are available, to provide medi care for civilian employees and civilian dependents by o than drafted physicians, and related problems. The whole ject of how best to care for dependents of military perso needs also to be thoroughly explored with the possibility using civilian physicians and facilities wherever possible. In connection a questionnaire filled out by 1,600 physicians arated from the service during the first half of the year 195 reported by the AMA in its official journal on January 1955—shows that military doctors spent 61.6 per cent of t on their civilian patients. Of this amount of time, 28 per c went to dependents and 32 per cent to other civilians. This in the United States. Overseas the percentage was higher. M tary doctors overseas spent 72 per cent of time caring civilians, with 8.4 per cent of time going to civilian depende

Now, according to the AMA estimates, the total number doctors in the United States totals 221,000 in a population 165 million. This is a ratio of 1 doctor to every 747 civilia as contrasted to the ratio of 3 per 1,000 troop strength in t armed services. Also, the Department of Defense ratio do not take into consideration the interns in military hospitals a only considers one-half of the military residency physicians the grounds that they do not actually give medical care.

Mr. Speaker, in my opinion, the problems in the doctor's dra legislation are too large and too important to push this legi lation through as an afterthought and as a mere appendage the basic draft law. I urge that the bill be recommitted to th conferees for deletion of the title relating to the doctors draf

(Mr. Durham asked and was given permission to revise and tend his remarks.)

Mr. Judd. Mr. Speaker, I voted for the doctors' draft in ugust, 1950. We were at war. It was necessary to enlarge our rmed Forces on a crash basis, calling back into active service ns of thousands of men who had already fought for years in 'orld War II. The medical services had to be expanded in st as rapid and, to some extent, disorderly manner. Much as regretted having to vote for a measure which openly discrimiited against one group of our citizens, because of their profesonal skills in the healing arts, I was willing to swallow my nvictions with respect to the Constitution of the United States ıder those circumstances, for the very reasons presented by ıe gentleman from Georgia. But his reasons do not apply today. 'e are not at war today and have not been for 2 years. Our rmed Forces have been substantially reduced.

I would vote to extend the doctors' draft law now if it could demonstrated to be necessary to get enough doctors for the en in the Armed Forces. But that has not been and I think ınnot be demonstrated. So I cannot vote for title II of this onference report under the circumstances now prevailing.

First. The procedure under which this conference report is rought before us is wrong, as the gentleman from Virginia has well pointed out. We are asked to swallow here, without even ılping, a very controversial piece of legislation we have never ɜen permitted to consider, debate, and amend under the usual ıles and practices of the House of Representatives.

Even worse, the whole principle of discriminating against one oup of citizens is wrong—and certainly unjustifiable unless can be shown to be absolutely necessary. And that cannot be ıown. The Health Resources Advisory Commission of the ffice of Defense Management in January of this year said the octors' draft was not needed to get enough doctors.

The Hoover Commission Task Force on Federal Medical ervices, on February 19, of this year, specifically recommended ıat this piece of legislation, the doctors' draft law, not be exnded or reenacted. Those are its words.

Then why does the Pentagon say it is necessary? You know ıe reason. It is a lot easier to get doctors and dentists by force ıan by building up an attractive medical service that doctors ill be glad and proud to enter as a career. As long as the ilitary can get them by compulsion under a draft, they will ever build up again an adequate professional medical service.

The gentleman from Georgia asked, "How are you going to t doctors if you do not draft them?"

The answer is, "Get them the same way we get other spealized personnel—that is, provide a greater incentive."

What did we do when we could not get or keep enough ergeants and various types of specialized technicians in the rmed Forces? We passed a bill just a few months ago to make ıe positions more attractive. It is working.

We did not say, "We are going to draft you and make you end 3 more years in the Marines because we need expert techicians, expert mechanics, and expert electricians in order to ive our boys every proper service."

We did not go down to the filling stations and airplane angars and grab all the top mechanics up to 45 years of age, o guarantee that the boys whom we draft to fly our planes and lrive our tanks have the finest specialists to make sure their nachinery is in tiptop shape and their lives will not be endanered. Why not?

We do not go down to the Statler and the Mayflower Hotels nd say, "We are going to draft all your chefs under 45 because ur boys must have the very best nutrition possible." Why not?

Just why do we pick out one particular group of our citizens nd say that even in peacetime it has got to render a different ype and degree of service than any other group of citizens, and t a time when the agencies set up to study this very problem ay that it is not necessary?

Who should know more about it and give a more unbiased eport than the Office of Defense Mobilization and the Hoover ommission? They say this doctors' draft is no longer needed.

Interestingly enough, the Department of Defense reported that the number of available doctors under the regular draft during the next 2 years would be 6,200. Surgeon General Armstrong testified there would be 6,600. The Health Resources Advisory Committee of the Office of Defense Mobilization said there would be 7,000. Now, here are 3 agencies of the executive branch that ought to know most about the matter and they come up with 3 different figures. Apparently they do not have enough or sufficiently expert accountants. Maybe we ought to draft into the Armed Forces all the CPA's under 45 years of age, and see if they cannot determine what the correct figure is.

Another reason why the military say they do not have enough doctors is because they do not use them efficiently. Almost every doctor in the service will tell you that.

Another is that it uses them to treat 3 million dependents and more than 1 million civilian employees. That may be necessary overseas, but not in most American communities.

Another is that it details them for various civilian medical agencies like the Public Health Service. That is a wonderful organization doing a very important work. But since when is it our system to draft men in middle age for civilian jobs?

Why, then, does the Pentagon say the draft is needed? Because it can get its doctors this way easily. They have not taken the trouble to develop a really attractive career service. And if the House passes this bill today, I venture to predict that they will be here 2 years from now, and then 2 years from that time, asking for further extension. It is human nature never to do voluntarily the things necessary to correct a situation, as long as one can overcome it by the coersive [sic] power of the Government.

Mr. Speaker, I hope the motion to recommit will be adopted. Then we can tackle this problem and solve it in the regular American peacetime way. No one in the Armed Forces is going to suffer for lack of sufficiently trained and experienced doctors.

Mr. Vinson. Mr. Speaker, I yield 8 minutes to the gentleman from Missouri [Mr. Short].

Mr. Short. Mr. Speaker, I shall not take 8 minutes which the chairman of the committee has so generously allotted me.

We have got to face a reality more than a theory here today. It is pretty tough when you are caught between the millstones of two great, able, and fine gentlemen like the gentleman from Georgia, the chairman of the committee, and the gentleman from Virginia [Mr. Smith], the chairman of the Committee on Rules. It only goes to show that there can be an honest difference of opinion between wise and good men on a highly controversial issue.

None of us wanted to vote for the doctors draft law when we originally passed it. We frankly admitted that it was discriminatory. But how in the world are you going to draft the youth of this Nation into the different branches of our armed services without providing adequate and well-trained and highly qualified medical care for them?

The gentleman from Virginia [Mr. Smith] says that the doctors in our Military Establishment have delivered 45,000 babies. Well, I am glad that the population goes on. I do not know how you are going to control human nature, which is a powerful thing, by passing a bill on the floor of this House. And who wants to stop all the fun?

I cannot understand why anyone would vote for the extension of the general draft bill for 4 years and extend the dependency benefits, which we do in this bill, and which is absolutely necessary for our national security, and then refuse to vote not only for an adequate number of doctors, but doctors who are trained and well-qualified. Our armed services must have some experienced doctors and not all neophytes.

I want to point out to the House here that in conference the Senate was very adamant on this particular point. They pointed out that even if all the young graduates of our medical schools were taken in the Armed Forces we would still be 1,152 short of the required number; but that we could go from 51 down to 46 years of age and still defer perhaps about 1,200 doctors who could take their 2 years of residency.

What Member of this House would want his son or daughter in the service, regardless what branch of service, to be treated, or to be operated upon by a youngster just out of medical school, until he has had at least 1 year internship and 2 years of residency? Members of our armed services even in times of peace perform hazardous duties and in times of war face the gravest dangers. They suffer violent shock, the severest wounds, and the most intense pain. Who is there among us who would deny them the best—the very best—of medical care? We should insist upon quality as well as quantity of physicians. It is a mathematical problem. It is not difficult for anyone to compute. If you go below the age of 46 you will have such a narrow margin that practically all the men in our armed services will have to be treated by rather young and inexperienced physicians.

I might say that as a national policy the services have drafted doctors not older than 38 years of age, but we all know as a matter of practical, commonsense you must have older doctors sandwiched in with these new recruits or graduates out of our medical schools if you are going to protect the health and maintain the morale of our armed services.

I think the doctors by and large are fairly well satisfied. They are patriots. Of course, they do not like it. You can understand that. But there are only a few doctors who have been bitter in their criticism so far as I know. I have had two or three call on me. But when you realize that the vast majority of doctors that will be brought in under this extension of the act for 2 years are men who have never served a day in the armed services, I do not see what justification there is for much complaint about it. Some of these doctors got their education at Government expense and I do not want to recall doctors with prior service. It is just about as simple as that.

There are very few changes in these bills except we did lower the age of the men who enlisted before their 18½ birthday in he National Guard, liable under present law for call to duty p to 35 years of age. The House lowered that to 26, the Senate extended the age to 28. We have agreed to the Senate provision. I think it is an improvement in the present general draft law.

In the doctors draft law, we voted not only to lower the limit by 5 years, from 51 to 46, which will allow many doctors to escape service, but we will get a sufficient number so that these doctors that are brought in will be not only graduates of medical schools but will have had their residency training. I repeat we want quality as well as quantity and the best is none too good.

Mr. Gavin. May I indulge your patience at this particular point. I would like to read from the statement that Rear Adm. Lamont Pugh of the United States Navy, former surgeon general of the Navy and now retired, made before this committee I think in 1953, which indicates why the doctors draft legislation is necessary:

> In December of 1948 the American Medical Association addressed a letter to each of 7,610 doctors in the United States who were then less than 26 years of age urging them to volunteer for active duty. Special reference was made to those who had received V-12 or ASTP training. The letters pointed out their liability for induction under the Selective Service Act which had been passed earlier that year and gave other pertinent information regarding the situation. Cards were enclosed for the recipient to fill out and return to the AMA, which in turn forwarded the cards to the Surgeon General of the appropriate armed service. The Bureau of Medicine and Surgery addressed a letter to each of the doctors from whom a card was received, giving complete information on how and where to apply for a commission and active duty. For those not holding commissions in the Medical Corps Reserve, the Bureau of Medicine and Surgery prepared an application letter, including a franked envelope addressed to the nearest office of naval officer procurement so that all that was necessary on their part to obtain the application forms was to affix their signature and mail the letter. A copy of the Bureau letter to each of these young doctors was also sent to our district medical officers and the appropriate officer-in-charge of naval officer procurement in order that they might contact each doctor and assist him in every possible way. Only 33 medical officers out of the total of 7,610 receiving the letter came on active duty for a period of 2 years as a result of this program.

Mr. Short. That is very true. But it does not reveal the true feelings of the doctors of America. They are fine men.

Let me say this in closing: Your conferees fought hard and diligently with the conferees of the other body trying to maintain every one of the positions of the House, but you know that all legislation is the result of compromise. We had to give as well as take. Those gentlemen over there were adamant. Both these laws are going to expire just 60 hours from now, on midnight Thursday. This administration, the White House, the Department of Defense, are very eager to have this conference report adopted today. I hope the House will go along with us, because we did succeed in persuading the Senate to lower the age from 51 to 46 for doctors.

Mr. August H. Andresen. The gentleman has referred to reducing the age limit in the regular draft from 35 to 28. What is the status of a man now who has already reached the age of 28? Will he be drafted under the new law if he is in class 1-A?

Mr. Short. If he is in class 1-A, he could be drafted under the law as it is today.

Mr. August H. Andresen. But after the present law expires on June 30, does he come under the new law then, so that if he has reached the age of 28 he will not be drafted?

Mr. Short. I doubt if they can draft anyone after that.

Mr. Martin. I would like to ask the gentleman from Missouri if it is not true that the President and the administration is very much opposed to the motion to recommit this conference report and are anxious to have this legislation passed because they know how pressing time is.

Mr. Short. Of course, it is as I stated. We are faced with a reality and not a theory. I rather deplore the fact that we did not have a full and open discussion of the extension of the doctors' draft as well as of the general draft law, but we did not have, although our committee reported out both bills weeks ago. Unless we act today, we imperil the safety of this Nation.

Mr. Madden. Mr. Speaker, it is indeed unfortunate that this legislation which includes the complicated and involved doctors-draft bill, comes before the House through the back door. The chairman of the Armed Services Committee and several Members appeared before the Rules Committee some time ago in order to get a rule dealing with the doctors draft legislation. For some reason which is not clear, the chairman of the Armed Services Committee and members of the conference committee saw fit to attach the complicated doctors-draft legislation to the extension of the original draft bill after it passed the other body. As a consequence, 435 Members of the House are barred from debating, speaking, and amending the doctors-draft legislation because it comes in here under the limited 1-hour debate allotted to a conference report.

There is no question that the doctors-draft legislation is class legislation and it involves the welfare and families of thousands of doctors throughout the country. It also indirectly affects thousands of families in regard to their medical attention and services. Every Member of Congress should be given an opportunity to express himself if he so desires, to offer and to vote on amendments to legislation of this importance. Under the present back-door approach which the conferees have seen fit to use in order to carry out the recommendations of the Pentagon, I am compelled to vote to recommit this draft legislation with the recommendation that the doctors-draft amendment thereto be brought back to the floor as a separate piece of legislation.

I voted for the doctors draft in 1950 when we were in active war in Korea and voted for the extension on two different occasions. This is the first time Congress has been asked to consider the drafting of doctors or any other professional or classified segment of our economy in times of peace. There has been a lapse of 5 years since the original doctors-draft law was passed and today it calls for a more complete study involving change and improvement. A great deal of testimony was presented to the Armed Services Committee, setting out that the doctors-draft law is not necessary at this time. We do know that the present policy of the administration has been to curtail and shrink our Army personnel, but in spite of this decrease, the present medical-draft bill calls for more doctors in the military than during wartime.

I am very much in favor of every member of the military and his family securing all the necessary medical attention to which he is entitled, by reason of his patriotic service, and I will gladly vote for any draft legislation that is essential for our military and for our defense. Considering the steamroller tactics used in ramming through the House this important medical-draft legislation as an appendage to the extension of the original draft bill, it is not fair to the public, the Members of the House, or the medical profession of the Nation. Therefore, I shall vote to recommit this bill with instructions that the doctors-draft legislation be returned to the House where it can be amply debated, amended, and passed in fairness to all concerned.

MR. JUDD. Accepting the argument that we must not draft boys into the armed services without giving them the very best medical care, does the gentleman think it is proper and constitutional to draft 845 physicians supposedly into the armed services to take care of our soldiers, and then detail them to work in a civilian agency—the Public Health Service and the National Institute of Health?

MR. KILDAY. Mr. Speaker, history has a way of repeating itself. Sometimes it has an alarming and frightening way of repeating itself. Those of us who were here in the summer of 1945 recall the letters we received within a matter of 2 or 3 days after V-J Day, "To get my boy out of the service." We remember that we helped to preside over not the demobilization of the finest fighting machine that was ever organized in the history of man—we did not see it demobilized—we saw it disintegrate before our eyes. Here we are talking about a draft in time of peace and we have it thrown out to us that we are attempting to draft doctors to treat the cook at the Russian Embassy. The Russians agreed to a meeting at the summit. Molotov traipses across the United States smiling—and we are willing to demobilize. For a period of more than 30 days the extension of the doctors' draft was stymied before the Committee on Rules. We have pending as unfinished business before the House a minimum Reserve plan which is caught in a parliamentary snarl—so much so that there has been reported out of the Committee on Armed Services today another minimum Reserve plan in the hope that we can break that parliamentary snarl. Instead of talking about the cook at the Russian Embassy, let us talk about the Russian MIG's off the coast of Alaska which 1 week ago tomorrow shot down in flames an American plane flying so close to American territory that it crash landed on the beach of an American island. The American people are willing to seize upon the prospect of one smiling Russian and ignore the American plane in flames because it is what they want to believe—that things are going to be all right.

There has been no argument here against the drafting of young men for service—the argument is whether we should extend the doctors draft to take in doctors who have not done any military service at all. These unorganized youths with no spokesmen are to be drafted. Then it is said that we can get the doctors under the regular draft. In every draft law that we have ever passed, we have placed a provision that no man shall be inducted until adequate housing and adequate medical care is available for him. Are we now going to say that we are going to take these young men into military service, go wherever the dictates of necessity may demand, and we are not going to carry out what we have done in the past to assure that they have the best of medical care available? Suppose you can get from the medical schools the number required, are you going to say that a young fellow who is out dealing with these horrible instruments of war, tanks, cannon, and guns, and whatnot, should his bones be broken in numerous places, that a man who has just completed his internship is going to doctor him, or are you going to say that he is going to have the best orthopedic surgeon that we can find at his disposal? This is just as simple and just as important as that. These are crucial times.

I have seen our Military Establishment go to pieces, but I hope not to see it again. I am sorry that a dispute has arisen between the chairmen of the two committees. I would have preferred to have discussed the doctors draft thoroughly on its merits. I would have agreed that the doctors draft is highly discriminatory and that it cannot be supported by reason and logic. It can only be supported because of the dire necessity that we must have the best of medical care when we draft the youth of the Nation and send them into service where they are subject to the dangers which exist.

Our laws have always provided for dependents of military personnel. It is traditional. We have all been alarmed in the recent past at our inability to retain career personnel, and we finally came to the conclusion that because we had been whittling away at the traditional benefits possessed by the military that we had lessened the attractiveness of a military career, and we have just begun to restore those traditional things when we are faced with this demand that they be eliminated.

How many doctors are assigned to all of these activities other than the military and veterans? Cooks for the Russian Embassy, if you please, and Government employees? A total of 40. A total of 40 are assigned to that type of duty. Eliminate them all and you have eliminated no part of the necessity of the extension of the Draft Act. Are you going to cut out the dependency care in an action such as this? I am in favor of providing an alternate program for taking care of the dependents. I propose to see to it that we get something done about it. Let us go to a group of doctors in the United States who know more about this subject than any other doctors in the United States. They were represented before our committee and the testimony appears at page 2674, Dr. William B. Walsh. He said:

> I appear here today as president of the National Medical Veterans' Society. I extend my gratitude on their behalf for your courtesy at similar hearings 2 years ago and at the opportunity to once again appear before this committee.
>
> The National Medical Veterans' Society supports the extension of the doctor-draft law for another 2-year period. After much soul searching and the consideration of the needs put forth by the military, we have no alternative but to support this discriminatory legislation.

He then explains the alternative for taking care of these dependents. Dependents consume, as the chairman has said, 800 of the total military personnel; the vast majority of these doctors are required for the active-duty military personnel. We must extend the draft notwithstanding the smiling Molotov in Chicago and San Francisco. We dare not send the President of these United States to a summit conference with it known throughout the length and the breadth of the world that the Congress of the United States has weakened in its support of the military program of the United States. Are we going to send him to a conference at the summit with it known by others participating in that conference that he can get so basic a thing as adequate medical care only through the greatest of effort and the bitterest of debate.

These things have plagued our Nation from the very beginning. Washington had them, so did Andy Jackson prior to the Battle of New Orleans; and again they plagued both sides after the first Battle of Bull Run, or the Battle of Manassas. And just before the Battle of Trenton, Thomas Paine wrote:

> These are the times that try men's souls. The summer soldier and the sunshine patriot will, in this crisis, shrink from the service of their country; but he that stands it now deserves the love and thanks of man and woman.

That is where we stand here now when we are not in a shooting war and when we want to prevent a shooting war.

Let us not be summer soldiers and sunshine patriots; let us adopt this conference report right now.

MR. MILLER of Nebraska. Under the rule the motion to recommit is subject to amendment, and I have an amendment.

THE SPEAKER. The gentleman from Georgia has moved the previous question on the motion to recommit. If the motion for the previous question is voted down the Chair will then recognize the gentleman from Nebraska to offer his amendment to the motion.

The question is on ordering the previous question.

The question was taken and on a division (demanded by Mr. Miller of Nebraska) there were—ayes 158, noes 80.

MR. JUDD. Mr. Speaker, I demand the yeas and nays on the motion ordering the previous question.

The yeas and nays were refused.

So the previous question was ordered.

THE SPEAKER. The question is on the motion to recommit.

MR. JUDD. Mr. Speaker, on that I demand the yeas and nays.

The yeas and nays were ordered.

The question was taken; and there were—yeas 171, nays 221, not voting 42, as follows:

[Roll No. 99]

YEAS—171

Abbitt
Adair
Alexander
Andersen, H. Carl
Andresen, August H.
Ashmore
Bailey
Barden
Barrett
Baumhart
Beamer
Bell
Bennett, Mich.
Bentley
Berry
Betts
Blatnik
Blitch
Bow
Bowler
Boyle
Brown, Ohio
Brownson
Broyhill
Budge
Burdick
Burleson
Burnside
Byrd
Byrne, Pa.
Cannon
Carlyle
Carrigg
Cederberg
Celler
Chase
Chenoweth
Chiperfield
Christopher
Chudoff
Church
Clark
Colmer
Crumpacker
Curtis, Mo.
Davidson
Davis, Ga.
Denton
Dies
Dollinger
Dolliver
Donohue
Donovan
Dorn, N. Y.
Dorn, S. C.
Dowdy
Durham

Fallon
Fascell
Fenton
Fino
Flynt
Forrester
Fountain
Frazier
Friedel
Garmatz
Gathings
Gentry
Granahan
Gregory
Gross
Harris
Harrison, Va.
Harvey
Hays, Ohio
Hiestand
Hill
Hinshaw
Hoeven
Hoffman, Ill.
Hoffman, Mich.
Holifield
Holtzman
Hosmer
Hull
Hyde
Jenkins
Jennings
Jensen
Johansen
Jonas
Jones, Mo.
Jones, N. C.
Judd
Kee
Kilgore
King, Calif.
Klein
Lane
LeCompte
Lipscomb
Long
Lovre
McCulloch
McDonough
McDowell
McVey
Mack, Wash.
Madden
Mason
Matthews
Miller, Nebr.
Mollohan

Morgan
Multer
Natcher
Nelson
Nicholson
O'Brien, N. Y.
O'Hara, Ill.
O'Hara, Minn.
Passman
Patterson
Pelly
Philbin
Phillips
Powell
Prouty
Ray
Reed, Ill.
Rees, Kans.
Reuss
Robeson, Va.
Robsion [sic], Ky.
Rogers, Colo.
Rogers, Fla.
Rogers, Tex.
Rutherford
Schenck
Schwengel
Scudder
Selden
Sheehan
Shuford
Siler
Simpson, Ill.
Smith, Kans.
Smith, Va.
Smith, Wis.
Staggers
Talle
Thompson, Mich.
Tollefson
Tuck
Udall
Utt
Van Pelt
Vorys
Wainwright
Watts
Weaver
Westland
Whitten
Wier
Williams, Miss.
Williams, N. J.
Withrow
Wolverton
Young
Younger

NAYS—221

Abernethy
Addonizio
Albert
Alger
Allen, Calif.
Allen, Ill.
Andrews
Anfuso
Arends
Ashley
Aspinall
Auchincloss
Avery
Ayres
Baker
Baldwin
Bass, N. H.
Bass, Tenn.
Bates
Becker
Belcher
Bennett, Fla.
Boggs
Boland
Bolling
Bolton, Frances P.
Bonner
Bosch
Bray
Brooks, La.
Brooks, Tex.
Brown, Ga.

Buchanan
Bush
Byrnes, Wis.
Carnahan
Chelf
Clevenger
Cole
Cooley
Coon
Cooper
Corbett
Coudert
Cramer
Cretella
Cunningham
Curtis, Mass.
Dague
Davis, Wis.
Dawson, Ill.
Dawson, Utah
Deane
Delaney
Dempsey
Derounian
Devereux
Diggs
Dixon
Dodd
Dondero
Edmondson
Elliott
Engle

Evins
Feighan
Fernandez
Fine
Fisher
Fjare
Flood
Fogarty
Forand
Ford
Fulton
Gary
Gavin
George
Gordon
Grant
Green, Oreg.
Griffiths
Hagen
Hale
Haley
Halleck
Hand
Harden
Hardy
Harrison, Nebr.
Hays, Ark.
Hayworth
Hébert
Herlong
Heselton
Hess

Hillings
Holmes
Hope
Huddleston
Ikard
Jarman
Johnson, Calif.
Johnson, Wis.
Jones, Ala.
Karsten
Kean
Keating
Kelley, Pa.
Kelly, N. Y.
Keogh
Kilburn
Kilday
King, Pa.
Kirwan
Kluczynski
Landrum
Lanham
Lankford
Latham
Lesinski
McCarthy
McConnell
McCormack
McIntire
McMillan
Macdonald
Machrowicz
Magnuson
Mahon
Mailliard
Marshall
Martin
Merrow
Metcalf
Miller, Calif.
Miller, Md.
Miller, N. Y.

Mills
Minshall
Morano
Moss
Murray, Ill.
Murray, Tenn.
Norblad
Norrell
O'Brien, Ill.
O'Neill
Osmers
Ostertag
Patman
Perkins
Pfost
Pilcher
Pillion
Poage
Poff
Preston
Price
Priest
Rabaut
Radwan
Rains
Reece, Tenn.
Rhodes, Ariz.
Rhodes, Pa.
Richards
Riehlman
Riley
Roberts
Rodino
Rogers, Mass.
Rooney
Roosevelt
Sadlak
Saylor
Scott
Scrivner
Seely-Brown
Shelley

Sheppard
Short
Sieminski
Sikes
Sisk
Smith, Miss.
Spence
Springer
Steed
Sullivan
Taber
Taylor
Teague, Calif.
Teague, Tex.
Thomas
Thompson, La.
Thompson, N. J.
Thompson, Tex.
Thompson, Wyo.
Thornberry
Trimble
Tumulty
Vanik
Van Zandt
Velde
Vinson
Vursell
Walter
Wharton
Wickersham
Wigglesworth
Williams, N. Y.
Willis
Wilson, Calif.
Wilson, Ind.
Winstead
Wolcott
Wright
Yates
Zablocki
Zelenko

NOT VOTING—42

Bolton, Oliver P.
Boykin
Buckley
Canfield
Chatham
Davis, Tenn.
Dingell
Doyle
Eberharter
Ellsworth
Frelinghuysen
Gamble
Gray
Green, Pa.

Gubser
Gwinn
Henderson
Holt
Horan
Jackson
James
Kearney
Kearns
Knox
Knutson
Krueger
Laird
McGregor

Mack, Ill.
Meader
Morrison
Moulder
Mumma
O'Konski
Polk
Quigley
Reed, N. Y.
Rivers
St. George
Scherer
Simpson, Pa.
Widnall

So the motion to recommit was rejected.

The Clerk announced the following pairs:

On this vote:

Mr. Moulder for, with Mr. Mack of Illinois against.
Mr. McGregor for, with Mr. Buckley against.

General pairs:

Mr. Morrison with Mrs. St. George.
Mr. Polk with Mr. Simpson of Pennsylvania.
Mr. Eberharter with Mr. Jackson.
Mr. Dingell with Mr. Holt.
Mr. Quigley with Mr. Horan.
Mr. Chatham with Mr. Scherer.
Mr. Green of Pennsylvania with Mr. Ellsworth.
Mr. Gray with Mr. Gubser.
Mr. Rivers with Mr. Henderson.
Mr. Boykin with Mr. Kearns.
Mrs. Knutson with Mr. James.
Mr. Doyle with Mr. Knox.
Mr. Davis of Tennessee with Mr. Frelinghuysen.

Mr. Baker changed his vote from "yea" to "nay."

Mr. Mollohan changed his vote from "nay" to "yea."

The result of the vote was announced as above recorded.

THE SPEAKER. The question is on the conference report.

MR. VINSON. Mr. Speaker, on that I ask for the yeas and nay

The yeas and nays were ordered.

The question was taken, and there were—yeas 388, nays 5, answered "present" 1, not voting 40, as follows:

[Roll No. 100]

YEAS—388

Abbitt
Abernethy
Adair
Addonizio
Albert
Alexander
Alger
Allen, Calif.
Allen, Ill.
Andersen, H. Carl
Andresen, August H.
Andrews
Anfuso
Arends
Ashley
Ashmore
Aspinall
Auchincloss
Avery
Ayres
Bailey
Baker
Baldwin
Barrett
Bass, N. H.
Bass, Tenn.
Bates
Baumhart
Beamer
Becker
Belcher
Bell
Bennett, Fla.
Bennett, Mich.
Bentley
Berry
Betts
Blatnik
Blitch
Boggs
Boland
Bolling
Bolton, Frances P.
Bonner
Bosch
Bow
Bowler
Boyle
Bray
Brooks, La.
Brooks, Tex.
Brown, Ga.
Brown, Ohio
Brownson
Broyhill
Buchanan
Budge
Burdick
Burleson
Burnside
Bush
Byrd
Byrne, Pa.
Byrnes, Wis.
Cannon
Carlyle
Carnahan
Carrigg
Cederberg
Celler
Chase
Chelf
Chenoweth
Chiperfield
Chudoff
Church
Clark
Clevenger
Cole
Colmer
Cooley
Coon
Cooper
Corbett
Coudert
Cramer
Cretella
Cunningham
Curtis, Mass.
Curtis, Mo.
Dague
Davidson
Davis, Ga.
Davis, Wis.
Dawson, Ill.
Dawson, Utah
Deane
Delaney
Dempsey
Denton
Derounian
Devereux
Dies
Diggs
Dixon
Dodd
Dollinger
Dolliver
Dondero
Donohue
Donovan
Dorn, N. Y.
Dorn, S. C.
Dowdy
Durham
Edmondson
Elliott
Engle
Evins
Fallon
Fascell
Feighan
Fenton
Fernandez
Fine
Fino
Fisher
Fjare
Flood
Flynt
Fogarty
Forand
Ford
Forrester
Fountain
Frazier
Friedel
Fulton
Garmatz
Gary
Gathings
Gavin
Gentry
George
Gordon
Granahan
Grant
Gray
Green, Oreg.
Gregory
Griffiths
Gross
Gwinn
Hagen
Hale
Haley
Halleck
Hand
Harden
Hardy
Harris
Harrison, Nebr.
Harrison, Va.
Harvey
Hays, Ark.
Hays, Ohio
Hayworth
Hébert
Herlong
Heselton
Hess
Hiestand
Hill
Hillings
Hinshaw
Hoeven
Hoffman, Ill.
Holifield
Holmes
Holtzman
Hope
Hosmer
Huddleston
Hull
Hyde
Ikard
Jarman
Jenkins
Jennings
Jensen
Johansen
Johnson, Calif.
Johnson, Wis.
Jonas
Jones, Ala.
Jones, Mo.
Jones, N. C.
Judd
Karsten
Kean
Keating
Kee
Kelley, Pa.
Kelly, N. Y.
Keogh
Kilburn
Kilday
Kilgore
King, Calif.
King, Pa.
Kirwan
Klein
Kluczynski
Laird
Landrum
Lane
Lanham
Lankford
Latham
LeCompte
Lesinski
Lipscomb
Long
Lovre
McCarthy
McConnell
McCormack
McCulloch
McDonough
McDowell
McIntire
McMillan
McVey
Macdonald
Machrowicz
Mack, Wash.
Madden
Magnuson
Mahon
Mailliard
Marshall
Martin
Matthews
Merrow
Metcalf
Miller, Calif.
Miller, Md.
Miller, Nebr.
Miller, N. Y.
Mills
Minshall
Mollohan
Morano
Morgan
Moss
Multer
Murray, Ill.
Murray, Tenn.
Natcher
Nelson
Nicholson
Norblad
Norrell
O'Brien, Ill.
O'Brien, N. Y.
O'Hara, Ill.
O'Hara, Minn.
O'Neill
Osmers
Ostertag
Patman
Patterson
Pelly
Perkins
Pfost
Philbin
Phillips
Pilcher
Pillion
Poage
Poff
Powell
Preston
Price
Priest
Prouty
Rabaut
Radwan
Rains
Ray
Reece, Tenn.
Reed, Ill.
Rees, Kans.
Reuss
Rhodes, Ariz.
Rhodes, Pa.
Richards
Riehlman
Riley
Roberts
Robeson, Va.
Robison, Ky.
Rodino
Rogers, Colo.
Rogers, Fla.
Rogers, Mass.
Rogers, Tex.
Rooney
Roosevelt
Rutherford
Sadlack
Saylor
Schenck
Schwengel
Scott
Scrivner
Scudder
Seely-Brown
Selden
Sheehan
Shelley
Short
Shuford
Sieminski
Sikes
Siler
Simpson, Ill.
Sisk
Smith, Miss.
Smith, Va.
Smith, Wis.
Spence
Springer
Staggers
Steed
Sullivan
Taber
Talle
Taylor
Teague, Calif.
Teague, Tex.
Thomas
Thompson, La.
Thompson, Mich.
Thompson, N. J.
Thompson, Tex.
Thomson, Wyo.
Thornberry
Tollefson
Trimble
Tuck
Tumulty
Udall
Utt
Vanik
Van Pelt
Van Zandt
Velde
Vinson
Vorys
Vursell
Wainwright
Walter
Watts
Weaver
Westland
Wharton
Whitten
Wickersham
Widnall
Wier
Wigglesworth
Williams, Miss.
Williams, N. J.
Williams, N. Y.
Willis
Wilson, Calif.
Wilson, Ind.
Winstead
Withrow
Wolcott
Wolverton
Wright
Yates
Young
Younger
Zablocki
Zelenko

NAYS—5

Barden
Crumpacker
Hoffman, Mich.
Mason
Smith, Kans.

ANSWERED "PRESENT"—1

Christopher

NOT VOTING—40

Bolton, Oliver P.
Boykin
Buckley
Canfield
Chatham
Davis, Tenn.
Dingell
Doyle
Eberharter
Ellsworth
Frelinghuysen
Gamble
Green, Pa.
Gubser
Henderson
Holt
Horan
Jackson
James
Kearney
Kearns
Knox
Knutson
Krueger
McGregor
Mack, Ill.
Meader
Morrison
Moulder
Mumma
O'Konski
Passman
Polk
Quigley
Reed, N. Y.
Rivers
St. George
Scherer
Sheppard
Simpson, Pa.

So the conference report was agreed to.

The Clerk announced the following pairs:

On this vote:

Mr. Mack of Illinois for, with Mr. McGregor against.

General pairs:

Mr. Morrison with Mr. Simpson of Pennsylvania.
Mr. Doyle with Mr. Scherer.
Mr. Moulder with Mrs. St. George.
Mr. Buckley with Mr. Frelinghuysen.
Mr. Green of Pennsylvania with Mr. Ellsworth.
Mr. Chatham with Mr. Horan.
Mr. Boykin with Mr. Holt.
Mr. Rivers with Mr. Jackson.
Mr. Polk with Mr. James.
Mr. Passman with Mr. Knox.
Mr. Eberharter with Mr. Kearney.
Mr. Quigley with Mr. Kearns.
Mr. Dingell with Mr. Henderson.
Mr. Davis of Tennessee with Mr. Gamble.
Mr. Sheppard with Mr. Gubser.
Mrs. Knutson with Mr. Canfield.

Mr. Barrett changed his vote from "nay" to "yea."

Mr. Christopher changed his vote from "yea" to "present."

The result of the vote was announced as above recorded.

A motion to reconsider was laid on the table.

MEDICAL FILM REVIEWS

Abdominal Pregnancy with Living Baby: 16 mm., color, sound, showing time 15 minutes. Prepared in 1954 by and procurable on loan from Milton L. McCall, M.D., 1542 Tulane Ave., New Orleans 12.

The purpose of this film is to depict an abdominal pregnancy with the delivery of a full-term infant and to demonstrate the procedures used in diagnosis. The patient had had four previous laparotomies, two for pelvic disease and two for intestinal obstruction. Partial intestinal obstruction was present during this pregnancy. The diagnostic procedures, including history, pelvic examination, abdominal x-rays, hysterosalpingography, and tocography, are shown and the relative importance of each one emphasized. Laparotomy with delivery of a living normal full-term infant is shown. The placenta attached to the "roof" of a frozen pelvis is visualized and is allowed to remain in situ. The abdomen is closed without drainage. The results of endocrine assays of chorionic gonadotrophins and follicle-stimulating hormone are charted, and the points important in the safe management of abdominal pregnancy are reiterated. In general, the surgical sequence is good. It is difficult to assimilate the information presented on the tocograph, mainly because the lettering is too small and the graph includes too many data to be read in a short period of time. The photography is excellent, and the film will be of interest, particularly for its teaching value. It is recommended for showing to general practitioners.

Lymphomas and Leukemias: 16 mm., color, sound, showing time 54 minutes. Prepared by Alfred Gellhorn, M.D., Edith Sproul, M.D., Ruth Guttman, M.D., Columbia University; and George Hyman, M.D., Francis field Hospital, New York. Produced in 1954 by and procurable on from American Cancer Society, 521 W. 57th St., New York 19.

This film is a Kinescope of a program that was originally presented by closed-circuit television. The emphasis is on the aspects of clinical and pathological diagnosis. The technique and use of bone marrow aspiration are presented. The indications for radiotherapy and chemotherapy are discussed, and appropriate case material is used to illustrate therapeutic regimens. This film offers a great deal of essentially valuable information on the subject of lymphomas and leukemias; however, there are a few relatively minor criticisms. One could criticize the discussion of lymphomas, including lymphosarcoma and Hodgkin's disease, as a whole, as if they were essentially identical entities. There is not enough emphasis on the individuality of these two conditions. A serious shortcoming is that no reference is made to the advisability of considering surgical removal of early lesions, which in the opinion of many authorities on the subject is definitely indicated and may be a significant factor in the prolongation of life. In the discussion of the therapy of lymphomas, as well as of leukemias, in their late stages, transfusion reactions are considered an unavoidable evil. No reference is made to the fact that in most instances these transfusion reactions can be avoided by the use of packed or resuspended red blood cells after removal of the plasma. In the experience of many investigators this procedure has eliminated all or at least most transfusion reactions. The color qualities of the gross pathological specimens demonstrated are very inferior, and some actually make the demonstration of these specimens completely valueless. The value of the presentation is reduced by the participants' speaking in monotones. In general, the picture is good and is suitable for medical society meetings and hospital staff conferences.

Tobacco and the Human Body: 16 mm., black and white, sound, showing time 15 minutes. Educational collaborators: C. A. Mills, M.D., University of Cincinnati and Klaus R. Unna, M.D., University of Illinois. Produced in 1953 by and procurable on rental ($2.50) or purchase ($62.50) from Encyclopaedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill.

This film is a report on the scientific results of modern research evaluating the effects of the use of tobacco. It analyzes the contents of tobacco smoke, demonstrates some of the physiological effects of smoking, and sums up the factors to be considered in deciding whether to smoke. This is an attractive, well-planned film, and the pictures showing laboratory activities are natural and plausible. In general, the part dealing with the innervation of the heart is very confusing, largely because the innervation of the heart and its interaction with the blood vessels are simply too complicated to dispose of in a few minutes. The narration and pictures relating to carbon monoxide are commendable for their clarity and moderation. Pictures of a rabbit's heart are somewhat confusing, since it is difficult to determine just when the slowing and speeding up of the heart are ascribed to the nicotine. The amount of nicotine needed to cause convulsions should also have been mentioned. In general, this film is recommended for showing to high school students with a good discussion leader.

Gait: 16 mm., color, sound, showing time 33 minutes. Produced in 1953 by the Imperial Chemical Industries Film Unit at the National Hospital, Queen Square, London, England, by Dr. E. A. Carmichael assisted by Miss R. M. Hern, F.C.S.P. Procurable on loan from Imperial Chemical Industries (New York) Ltd., Film Library, 521 Fifth Ave., New York 17.

This is an excellent film that explains in simple terms the mechanisms involved in various types of abnormality of gait and then demonstrates typical examples of such abnormalities. Explanations are clear, and the narrator has been careful to avoid complex terms. The narrator employs a colored diagram and a pointer to show the brain, spinal cord, peripheral nerve, and muscle; to demonstrate the nerve pathways and innervation of the muscle; and to point out and explain where various types of lesions occur. After an explanation of the location of a certain lesion, the gait of a person having such a lesion is demonstrated carefully. The selection of cases is excellent, and by good photography, including close-up views and views from beneath the patient, who is walking across a glass surface, every detail is well shown. Abnormalities of gait occurring in primary disease of the muscle, in lesions of peripheral nerves, in damage to the spinal cord, in disturbances of the pyramidal tract, in defects of sensation and in cerebellar disturbances, as well as certain additional abnormal movements, are demonstrated carefully. There is of necessity some lack of detail in demonstrating all the abnormalities occurring in the gait of a patient having poliomyelitis, but the major abnormalities have been well shown. As this presentation does not go into any great detail regarding gait training or the correction of abnormalities of locomotion, "Basic Aspects of Abnormalities of Gait from a Neurologic Standpoint" might have been more appropriate as a title. The colored photography is of excellent quality, and the narration is very well done. The subject is so clearly presented in such simple terms that the film can be used profitably for instruction of a wide range of students, including nurses, physical therapists, occupational therapists, undergraduate medical students, and graduate students of medicine. One neurologist who viewed it commented that even well-trained neurologists would enjoy seeing this film.

Tetralogy of Fallot and Its Surgical Treatment: 16 mm., color, sound, showing time 32 minutes. Prepared by John C. Jones, M.D., University of Southern California. Produced in 1955 by Billy Burke Productions, Hollywood, Calif., for and procurable on loan from E. R. Squibb & Sons, 745 Fifth Ave., New York 22.

This film presents cyanosed children in whom a diagnosis of tetralogy of Fallot has been made. The symptoms and physical signs of this condition are presented in detail. Through a series of excellent drawings, the embryologic development of the heart is presented, as well as the blood flow through the heart, both in the normal patient and in the presence of tetralogy of Fallot. Two types of shunting operations (Blalock-Taussig and Potts-Smith) are illustrated by excellent drawings and by photography during surgery. The children are then shown as active convalescents, much improved in general condition. The general organization, narration, and presentation of this film are outstanding. The photography is very well done. This excellent teaching film is highly recommended to residents in thoracic surgery and any physicians concerned with the diagnosis and treatment of heart disease.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Precautions in the Use of Cortisone for Treatment of Rheumatic Diseases. L. E. Ward. Minnesota Med. 38:304-308 and 322 (May) 1955 [St. Paul].

The use of cortisone and related hormones, such as hydrocortisone, 1-dehydrocortisone (metacortandracin) and corticotropin (ACTH) in the treatment of rheumatic diseases must be attended by certain precautions that can be divided into three categories: (1) selection of the proper disease for treatment, (2) selection of the proper patient having one of these diseases, and (3) selection of proper dosage and attention to other details of management in the course of treatment. Cortisone or related hormones are indicated in rheumatoid arthritis and its variants, acute rheumatic fever, systemic lupus erythematosus, and periarteritis nodosa. Cortisone occasionally may be helpful, but its systemic administration is usually not indicated, in arthritis of hypersensitivity states, acute gouty arthritis, acute nonspecific bursitis, tendinitis, and the shoulder-hand syndrome. In this group of diseases other and simpler measures ordinarily suffice. Cortisone or related hormones should not be given for specific infectious (septic) arthritis, osteoarthritis, primary fibrositis, and psychogenic rheumatism. Absolute contraindications to prolonged use of the hormones are psychoses, adrenal cortical hyperfunction (Cushing's syndrome), tuberculosis, and acute poliomyelitis. Relative contraindications include renal and cardiovascular insufficiency, peptic ulcer, psychoneuroses, osteoporosis, diabetes mellitus, convulsive disorders, and certain severe intercurrent infections. The objective in the treatment of rheumatoid arthritis with cortisone or related hormones should be to achieve as much antirheumatic effect as possible without producing hypercortisonism. Experience suggests that daily doses for prolonged treatment should not exceed the following limits: for men, 50 to 60 mg.; for postmenopausal women, 30 to 35 mg.; and for other women, 40 mg. For acute, self-limited, but potentially damaging diseases, such as rheumatic fever, relatively large doses are used to produce quick suppression of the inflammatory reaction; then a gradually lowered but completely suppressive dose is maintained for the relatively brief course of the disease. Dosage and duration of treatment should be adjusted to the needs of the individual patient. For subacute and chronic diseases presenting occasional acute potentially fatal exacerbations, such as systemic lupus erythematosus, doses of 300 to 1,000 mg. or more per day may be given during the acute stage. Subsequently the dose is decreased, so that during the chronic stage little or no hormone is given. The pituitary-adrenal cortical mechanism is inhibited by long-term treatment with cortisone or corticotropin and, therefore, it cannot react normally to produce increased quantities of needed adrenal cortical hormones in case of stress. Thus in order to prevent the serious consequences of adrenal cortical insufficiency in severe stress, such as major surgical intervention, serious injury or severe intercurrent infection, sufficient additional hormone must be given. A patient treated with cortisone or related hormones should carry a card similar to that carried by a diabetic to inform those who might care for him in an emergency that special care and additional doses of hormone may be required.

Hypertrophic Muscular Dystrophy Associated with Acquired Thyroid Insufficiency in Adults. R. Picard, J. Horeau, J. Kerneis and others. Semaine hôp. Paris 31:1553-1555 (May 2) 1955 (In French) [Paris, France].

A 57-year-old man with hypertrophic muscular dystrophy and thyroid insufficiency was found to have greatly overdeveloped muscles in the legs, with induration, pain, and mechanical myotonia. His basal metabolism rate was -29%. Electrical testing showed a myotonic reaction and hypoexcitability. The amounts of alkaline phosphatase, creatinine, and cholinesterase in the blood were slightly below normal. With thyroid replacement therapy, muscular pain and hypertrophy diminished and the patient's myxedematous syndrome was improved. Such a double response to thyroid therapy was also encountered in 12 of 15 cases reported in the literature. In two instances this therapy was not administered, and in one it was unsuccessful, but that patient had congenital myopathy with associated myxedema. The authors' patient died from fulminating bronchopneumonia. Autopsy revealed lesions in the thyroid gland, but none in the diencephalon. The fibers taken from striated muscles in the affected regions showed great diversity of size, and there was a slight increase in the nuclei of the sarcolemma. That the hypertrophic myopathy with myotonia stems from the thyroid insufficiency present in such patients, or from some common antecedent of both disorders, seems an unavoidable conclusion in view of the therapeutic results obtained with replacement treatment; however, the exact relationship of the two diseases is unknown.

Smoking and Chewing of Tobacco in Relation to Cancer of the Upper Alimentary Tract. L. D. Sanghvi, K. C. M. Rao and V. R. Khanolkar. Brit. M. J. 1:1111-1114 (May 7) 1955 [London, England].

The 1,125 men and 335 women who attended the cancer clinic of the Tata Memorial Hospital in Bombay, India, between 1952 and 1954, were questioned regarding their chewing and smoking habits in relation to cancer of the upper alimentary tract. Of the 1,460 patients, 400 were referred to the cancer clinic for a check-up but did not show any evidence of neoplastic disease and served as controls. Of the remaining 1,060 patients, 840 had cancer of the upper alimentary tract and 220 had cancer in other organs. Of the 840 patients with cancer of the upper alimentary tract 119 had cancer of the buccal mucosa (group 1), 170 cancer of the anterior portion of the tongue, alveolus, palate, lip, and floor of the mouth (group 2), 102 of the esophagus (group 3), 152 of the hypopharynx (group 4), 203 of the base of the tongue (group 5), and 94 of the oropharynx (group 6). The smoking and chewing habits of both men and women in the control group were similar to those of the 220 patients with cancer in organs other than the upper alimentary tract. Women with cancer of the upper alimentary tract showed a higher incidence of smoking and about two and a half times the incidence of chewing compared with the control group. In men the results were more striking in that several gradients were observed in the incidence of habits among the different types of cancer. The habit of chewing was associated with cancer of the oral cavity (group 1 and 2); the combined habit of smoking and chewing was associated with cancer of the hypopharynx and base of the tongue (group 4 and 5); and only smoking was associated with cancer of the esophagus and oropharynx (group 3 and 6). Of the persons who smoked, 88.7% smoked bidis, the Indian form of cigarette. The percentage of smokers and the average number of bidis smoked showed a similar trend in all groups. These results indicate that tobacco may be one of the environmental factors for a large number of patients with cancer of the upper alimentary tract observed at the Tata Memorial Hospital. The habit of chewing tobacco and the associated types of cancer lead to an assumption of

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The place of publication of the periodicals appears in brackets preceding each abstract.

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the existence of a substance or substances in tobacco that may initiate or promote the production of cancer at the sites of prolonged contact.

Hexamethonium, Hydralazine, and Rauwolfia Serpentina Therapy in Hypertension. M. Markowitz, J. V. Koik, F. K. Hick and R. L. Grissom. Am. J. M. Sc. **229**:486-495 (May) 1955 [Philadelphia].

In order to evaluate the effect of hexamethonium, hydralazine, and Rauwolfia serpentina in patients with hypertensive vascular disease of varying degrees of severity, a clinic for hypertensives was begun by Markowitz and co-workers three years ago. This communication is concerned with the results of therapy in 66 patients. No patient was selected for study unless his diastolic pressure was consistently above 100 mm. Hg. Patients with a known history of primary renal disease or an initial nonprotein nitrogen above 70 mg. per 100 cc. were excluded. The patients selected for treatment were divided into four groups. The group 1 patients, who had mild hypertensive vascular disease, were treated with Rauwolfia serpentina alone. The patients of group 2 were given hexamethonium alone, or in combination with hydralazine and Rauwolfia serpentina. All but one of the group 2 patients had a fixed hypertension as well as organic changes in the heart, kidneys, and optic fundi. Group 3 patients with "malignant" hypertension were treated with hexamethonium, hydralazine, and Rauwolfia serpentina. The finding of papilledema was considered diagnostic of "malignant" hypertension. Group 4 included 12 patients previously treated by sympathectomy, whose diastolic hypertension persisted even in the standing position. These patients were treated with veratrum, hexamethonium, and Rauwolfia serpentina singly or in combination. The patients in all of the groups were seen in the outpatient clinic at frequent intervals. The blood pressure was recorded at each visit in the reclining, sitting, and standing positions. Of 26 patients with benign hypertensive vascular disease treated with Rauwolfia serpentina alone for an average of 10.5 months, 14 achieved a reduction in diastolic pressure of 15 mm. Hg or more. Nineteen patients with severe hypertensive vascular disease, treated with hexamethonium, hydralazine, and Rauwolfia serpentina for an average of 14 months achieved an average reduction in blood pressure (standing) of 45 mm. Hg systolic and 25 mm. Hg diastolic. Thirteen patients with "malignant" hypertension were treated with hexamethonium, hydralazine, and Rauwolfia serpentina. Of the six patients still living, five are white females who had a near normal nonprotein nitrogen initially. All four Negro males in this group died. Hexa- onium proved difficult to use due to repeated episodes of cope. In 66 patients of all types, there have been 10 deaths. nile therapy is drastic in many of the patients, and reduction of blood pressure worsened the clinical well-being of some patients, certain dramatic improvements were obtained, including the reversal of papilledema.

Hypertensive Ischemic Leg Ulcer. E. J. Orbach. Angiology **6**:153-161 (April) 1955 [Baltimore].

Orbach presents the histories of two patients, both 59-year-old women, who had ischemic leg ulcers, which had some, although not all, of the features of an entity first described by Martorell in 1945. The location of the typical ulcer is the area above the external malleolus, especially at the border of the middle and lower third of the leg. Usually but not always the ulcerations are symmetrical. Sometimes there is a pigmented area, or a scar on one leg and an ulceration on the other. The ulcer either starts as a small purple spot, which breaks down, or follows a slight injury. It lacks induration of the margins, is painful and resistant to treatment, and may persist for weeks, months, or even years. These ulcers occur mostly in women. There is always severe hypertension, and so the term "hypertensive ischemic ulcer" has been applied to the condition. Histologically the lesion is usually characterized by subendothelial hyalinosis of the arterioles, which leads to stenosis of the lumen, but the author believes that the syndrome is a clinical rather than a pathological entity. Treatment should be conservative, at least in the beginning. Sympathectomy might be advisable for the existing hypertension, but not for the ulcer alone. The ganglion-blocking agent hexamethonium, which, in addition to a hypotensive effect, also produces peripheral vasodilatation, theoretically appears to be a specific drug for the therapy of hypertensive ischemic ulcers. Locally, the enzymes Varidase and Tryptar produce a medical débridement of the ulcers. Antibiotic agents help to eliminate infection, if the specific antibiotic can be found by bacteriological sensitivity tests. Wound healing may be promoted by incorporation of hyaluronidase, which reduces tissue tension and increases the spread of tissue fluid. Minor surgical procedures consist in minute radiary incisions of the wound margin or in careful scarification of the skin-wound borders with the tip of the scalpel. The wounds should b covered. Sponge rubber incorporated into a supportive bandage which reaches from the metatarsal region up to the area below the knee, will keep the patient ambulatory. If under this treatment the ulcer should not heal within a reasonable time, excision of the ulcer down to the muscle tissue and skin graftin should be done. As a preventive measure patients with sever hypertension should be cautioned to avoid mechanical an thermal injuries to their legs, in the same manner as are diabeti and arteriosclerotic patients. Application of excessive cold an heat, such as ice bags and heating pads, should be forbidde Superficial wounds and abrasions should be cleansed and protected by bandages.

Response of Patients with Leukemia to 8-Azaguanine. J. Colsk L. E. Meiselas, S. J. Rosen and I. Schulman. Blood 10:48 492 (May) 1955 [New York].

The authors used 8-azaguanine, a compound closely rese bling guanine in chemical structure, in the treatment of fo patients with acute leukemia, one with chronic lymphatic le kemia, and one with lymphosarcoma. The drug had a mark retarding effect on the leukemic process in three of four patien with acute leukemia. In one patient with chronic lymphat leukemia and in one patient with lymphosarcoma, regression lymphadenopathy and hepatosplenomegaly resulted, but change in the hematological status occurred. Undesirable derm tological reactions and development of nausea and vomiti limited the amount of this drug that could be administered the individual patient. Cortisone administered concomitant with 8-azaguanine did not prevent the dermatitis. A study the effect of combinations of 8-azaguanine with other antine plastic drugs or with guanase inhibitors in the treatment human leukemia is warranted.

Results Obtained with Total Extract of Brassica Oleracea L. Treatment of Gastroduodenal Ulcer. C. Grugni. Minerva ch **10**:242-247 (March 31) 1955 (In Italian) [Turin, Italy].

"Cabagin," the dehydrated total juice of Brassica oleracea (a cabbage variety), was used in the treatment of 23 patien 7 of whom had gastric ulcer, 12 duodenal ulcer, and 2 gast duodenitis without ulcers. The patients received two capsu of the drug at each meal without any side-effects, but the da dose was reduced to four capsules for a few patients who h lost their appetite. The therapy was continued for about days, and the patients were kept on the same diet they had be receiving with the exception of alcohol, coffee, and tobacc which were not allowed. The drug greatly benefited the subje tive symptoms—heartburn, pain, and aerophagy—in most the patients, but it produced only slight changes in the gast peristalsis and the acidity of the secretion. The posttreatme roentgenograms of 10 patients showed marked improvement 5, with reduction of the niche in some and disappearance the indirect signs of the ulcer and normalization of the gast motility in others. Surgical intervention was required in t patients who did not respond to this therapy. They were fou to have ulcers of long standing, and the marked alterations the gastric walls explained the failure of the drug. The auth states that Cabagin exerts a protective action on the muco by supplying it with those principles that are capable of resto ing the mucosa's natural resistance to the digestive action the gastric juice. Although his experience with Cabagin has bee limited, he believes that it is valuable in the treatment of ulce Generally, if the ulcer involves only the mucosa, good resul can be obtained in 15 days, but in deeper ulcers they can b seen only after prolonged and repeated courses.

ortisone in the Treatment of Infectious Hepatitis. T. E. Huber nd A. T. Wiley. Ann. Int. Med. 42:1011-1025 (May) 1955 ancaster, Pa.].

The use of cortisone in the treatment of infectious hepatitis as based on its stimulating effect on the appetite. The authors resent the data assembled during a period of 17 months when ver 200 patients with infectious hepatitis were treated in the rmy Hospital in Yokohama, Japan. Excluding possible serum epatitis and other liver diseases, and using as a base line an terus index of 25 units, the patients were divided into two roups, one receiving cortisone and the other one serving as a ontrol group. Of those receiving cortisone alternate patients ere given the drug by the oral and the parenteral route. There eemed to be no advantage of the oral form of cortisone therapy ver the parenteral form, or vice versa. Treatment with corti-one caused a more rapid clearing of jaundice, as measured by he average icterus index and serum bilirubin levels, than ccurred in the controls. It caused a more rapid return of the ppetite, and the patients treated with it consumed more food, nd it caused a greater gain in weight than in the controls. The romsulphalein test in the cortisone-treated patients returned to ormal faster than in the controls. The patients treated with ortisone got well faster than did the controls. The authors be-eve that cortisone is of definite value in the treatment of hepa-tis. They do not, however, recommend the use of so potent a rug in the routine therapy of hepatitis, but believe that it should e of great value in those patients with hepatitis who do not espond to conventional treatment.

ontrol of Diabetes and Other Features of Acromegaly Follow-g Treatment with Estrogens. E. P. McCullagh, J. C. Beck, and . A. Schaffenburg. Diabetes 4:13-23 (Jan.-Feb.) 1955 [New ork].

In six women, ranging in age from 24 to 54 years the signs nd symptoms of acromegaly had been present for 1 to 16 ears prior to this study. They had all initially received stil-estrol in gradually increasing doses until a maintenance dose arying between 10 and 60 mg. daily was reached. The two atients who manifested intolerance to this drug were given thinyl estradiol in doses increasing, from 0.15 to 5.0 mg. aily. All these women were treated as outpatients. The large oses of estrogens resulted in clinical improvement in all six atients. The five patients with abnormal glucose tolerance urves showed reversal to normal or nearly normal values. One owed a persistently decreased tolerance during therapy, which as improved, though not completely corrected, by increasing e dosage of estrogens. All patients showed a sustained fall in rum phosphorus levels during estrogen administration. In one e basal metabolic rate fell gradually to normal. In the five in hom hand volumes were observed a decrease occurred with strogenic therapy, confirming the regression of acromegalic atures. Arterial hypertension appeared to be unaffected by is treatment. The effects observed are believed to be due to hibition of the production of growth hormone and possibly ther closely related substances.

epatic Coma: Physiopathology and Treatment with Glutamic cid. R. Cachera. Semaine hôp. Paris 31:1542-1552 (May 2) 955 (In French) [Paris, France].

Hepatic coma has two principal causes: severe acute hepatitis nd cirrhoses of various types. The common denominator in ases of hepatic coma is neither causation, specific hepatic esions, nor definite alterations in the central nervous system. ertain biochemical anomalies are the subject of current re-earch: the intervention of toxic substances, electrolyte and cid-base disturbances, disorders of glucose metabolism, and hose of nitrogen metabolism, especially of ammonia. Of the uthor's 11 patients with deep coma complicating cirrhosis of he liver, the disease was alcoholic in nine, postnecrotic macro-odular in one, and of unknown cause in one. The comas were f two kinds: deferred posthemorrhagic coma following major emorrhages from the digestive tract in four of the cirrhotic atients, and pure hepatic coma in seven. Treatment of the oma in the former group was successful in all patients, but hree died 10 to 45 days later as the result of progressive complications of the cirrhosis. In the latter group, two patients recovered, but the others did not respond to treatment and died. The author stresses the necessity of using combined therapy in hepatic coma. Cortisone injections should be given along with the glutamate. Antibiotics, correction of electrolyte imbalances (especially hypokaliemia), and copious infusions of dextrose are good adjuvants. Hepatic coma no longer presents a necessarily fatal prognosis.

The Problem of Malignant Disease in the Elderly. S. Cade. Practitioner 174:550-555 (May) 1955 [London, England].

The author discusses the treatment in elderly persons of cancer of the breast, colon and rectum, esophagus, tongue and mouth, and urinary bladder, and of reticulum-cell sarcomas. In general, palliation assumes a more important role than it does in younger patients, since long survival time is less interesting to the geriatric patient than is relief from symptoms. To formulate a policy it is necessary to regard cancer in the aged as acute or chronic. The disease falls into two groups: the urgent, in which treatment is an emergency measure, and the "cold," in which treatment may be performed in stages. The urgent or acute case may be early and localized or advanced and disseminated, but is always such that nonintervention will lead to death within a few days. Examples of such cases are acute intestinal obstruction from cancer of the intestine, abscess in the lung from cancer of the bronchus or esophagus, hematemesis from cancer of the stomach, or uremia from involvement of the ureters. The patient with acute cancer always remains an individual problem and, except in patients with intestinal obstruction, treatment should be symptomatic and the simplest possible. It is the chronic case that requires great judgment in management and a revision of treatment from time to time. Repeated treatments for the rest of the patient's life may be necessary. Palliation comprises the methods of treatment directed to the tumor itself, remedies for alleviation of symptoms, dieting, the care of open lesions, and control of discharge or bleeding.

Common Clinical Errors in the Care of the Elderly. F. D. Zeman. Practitioner 174:556-561 (May) 1955 [London, England].

There are four principal sources of error in the diagnosis and treatment of elderly persons. First, a defeatist attitude on the part of the physician examining or treating an aged person can induce in him a harmful laissez-faire policy. Stereotyped diagnostic thinking tends to narrow the possibilities in old people to arteriosclerotic heart disease, cerebral arteriosclerosis, and chronic arthritis, and the physician may overlook remediable conditions that can be detected only by careful clinical and laboratory studies, or even clinically obvious disorders. Mistaken therapy in elderly persons in commonly practiced. Oversedation, unwarranted delaying of operations, or withholding of medicaments, and failure to apply even the simplest psychotherapy are the commonest errors. Finally, the altered reactions of the aged to disease may yield atypical clinical findings. In order to avoid errors in the management of elderly patients, certain general suggestions can be made. The patient's individual background and personal problems must be understood. Social maladjustments may present themselves in the form of bizarre symptoms. The aged patient's good sense should never be underestimated, and full attention should be given to all his complaints. With age there comes a tendency to accept pain and discomfort as inevitable. Each patient must be examined thoroughly, since minor lesions are often disclosed which are remediable and which may cause more discomfort to the patient than serious disorders. It is the physician's task to see that preventive measures against household accidents are taken for the benefit of older people so that unnecessary suffering may be avoided.

Dangers of Inactivity During Automobile Travel. A. Soffer. Am. J. M. Sc. 229:475-476 (May) 1955 [Philadelphia].

Soffer presents the case of a 72-year old woman, who had enjoyed excellent health. Physical examination previous to a trip to Florida disclosed no abnormalities. This trip was made by bus and required about 68 hours. The bus stopped at mealtimes and for a rest period of 15 to 20 minutes between meals.

The patient slept on the bus for each of the three nights of the trip. Toward the end of the trip the patient noted pronounced edema of both lower extremities from the knee to the ankle. After a few days of rest, the patient returned by bus. Slight swelling of the legs persisted on arrival at home. Three days later, the patient had a grand mal convulsion, and two other severe tonic clonic grand mal convulsions occurred within the next 18 hours and were associated with emesis and followed by transient disorientation. The patient was hospitalized. Upon bed rest the edema of the lower extremities disappeared and the patient was made ambulatory in a few days. Since hospitalization and in the past 15 months the patient has experienced no neurological symptoms and no edema of the lower extremities. Peripheral vascular stasis followed by transient cerebral ischemia was the inciting cause of the grand mal convulsions. What occurred here, in an exaggerated form, is related to the cerebral ischemia (syncopal attacks) that occurs secondary to any permanent or transient state that permits excess pooling of blood in the lower extremities. In the author's case the efficiency of venous return reappeared when the patient was placed in the supine position for the first few critical days and then permitted to become ambulatory. A number of instances of thrombosis of the deep leg veins due to long automobile rides have been reported. Pulmonary embolization has been known to follow the appearance of the venous thrombosis. It is urgently recommended that automobile drivers and passengers make frequent stops to permit maximum motion of the legs. In the older age groups, precautionary measures during prolonged automobile trips should include leg bindings, and if edema appears, the trip must be interrupted to permit rest in the supine position.

Aldosterone—A Review. R. Gaunt, A. A. Renzi and J. J. Chart. J. Clin. Endocrinol. **15**:621-646 (May) 1955 [Springfield, Ill.].

Aldosterone, a specific crystalline component of the "amorphous fraction" of adrenal extract recently isolated under the [illegible] of electrocortin, is probably the main endocrine agent that regulates sodium, potassium, and chloride metabolism. It may also be involved in magnesium metabolism. Although it is the most active mineralocorticoid known, its actions are not limited to effects on electrolyte metabolism. In appropriate dosage, its effects can mimic those of hydrocortisone and it has some unique properties of its own. It is not just a more potent desoxycorticosterone; important qualitative as well as quantitative differences are clearly suggested between desoxycorticosterone and aldosterone. There is no evidence that the administration of aldosterone causes the pathological over-dosage effects of desoxycorticosterone when the two steroids are given in doses that are equipotent from the standpoint of sodium retention. The human diseases in which aldosterone may possibly be incriminated as a causative factor are those in which high rates of aldosterone excretion are associated with sodium retention and edema, such as congestive failure or nephrosis, and in the less well-known states of "primary aldosteronism" and "potassium-losing nephritis." In the diseases characterized by edema, it is easier to visualize excess aldosterone as being involved only in certain acute phases than as a causative agent. An understanding of the physiology of the hormone in health and disease must await elucidation of the mechanisms by which its rate of secretion is regulated. Its secretion continues in the absence of the pituitary (as early theory proposed); corticotropin in man and the dog, but perhaps not in the rat, does not affect its rate of secretion; and directly or indirectly its rate of secretion is affected by electrolyte intake. In addition and less certainly, it is possible that growth hormone stimulates its output, and that other corticoids suppress its secretion. The observation that low-salt diets call forth a compensatory secretion of aldosterone means that the effectiveness of such diets is self-limited. The discovery of a means to inhibit aldosterone secretion would provide a welcome therapeutic tool.

Experimental Study on Action of Vitamin B_{12} in Pernicious Anemia: Comparison Between Behavior of Gastric Mucosa and Bone Marrow. L. Celli. Minerva med. 46:467-472 (Feb. 21) 1955 (In Italian) [Turrin, Italy].

The effects of vitamin B_{12} on the gastric mucosa and the bone marrow of four patients with pernicious anemia who had had no previous therapy were studied. Each patient was given orally 40 mcg. of the vitamin combined with the intrinsic factor for 40 days. A sternal puncture, gastroscopic examination, and morphological examination of the peripheral blood was made of each patient before the therapy was instituted. These were repeated every 10 days during the course of the therapy for three times. The sternal puncture and the gastroscopic examination were always made on the same morning. The preparation exerted its action on the peptic cells and on the blood cells concurrently; the return to normal of the endoscopic findings was paralleled by the return to normal of the findings in the marrow. The maturation process of the peptic cells and that of the blood cells that had reverted to an embryonic-like structure was restored. The gastric mucosa began to reacquire a red color, but because it did so before the improvement in the peripheral blood was great enough to justify it, the author believes that the improvement in the color of the mucosa was due not only to improvement in the peripheral blood but also to vasodilatation of the arterial capillaries.

Pernicious Anemia in Norwegian District: Epidemiological Investigation. P. Kolstad. Nord. med. 53:597-601 (April 14) 1955 (In Norwegian) [Stockholm, Sweden].

From 1935 to 1953, 297 patients (127 men and 170 women were discharged from Drammen Hospital with a diagnosis o pernicious anemia; 76% of the patients were between 50 an 80, the youngest was 24, the oldest, 83. On the average 14 ne cases of the disease, or 9.3 per 100,000 inhabitants, are detecte annually in the Buskerud district. Of the 257 patients followe up, 50 died during the period of observation, at an average ag of 71. The most important cause of death was cancer of th stomach. Twenty, or 40% died from this cause, as against a expected 13%. Otherwise the prognosis seems to be good. Mo of the patients who died died with, not from, their pernicio anemia. Half of the patients were living more than 7 years aft establishment of the diagnosis, and 30% more than 10 yea afterward. The disease is apparently endogenous. Familial occu rence was found in 12% of the patients.

Allergy and Diencephalon. A. Jacquelin, M. Roman, R. Slan and others. Semaine hôp. Paris **31**:1480-1486 (April 30) 19 (In French) [Paris, France].

Emotional disturbances of various kinds may result in t establishment of allergic sensitivity to a wide variety of prev ously innocuous substances. The histories of patients with po emotional allergy show that most, if not all, have a congenit vulnerability (often hereditary or familial) to the sensitizi effect of emotion, because they are anxious, hyperemotion hyperexcitable, and generally nervous. The allergic manifest tions shown by these patients may be respiratory (asthm rhinitis, and spasmodic tracheitis), digestive (spasmodic colit attacks of gastric hyperacidity, and gastroduodenal ulcer), cutaneous (urticaria, Quincke's edema, and eczema). House du foods of all kinds, emanations from domestic animals, polle cosmetics, DDT, and the most harmless medicaments, ev aspirin, are among the allergens to which postemotional sens tivity may develop; in fact, the sensitizing substances are usual those encountered in normal living. These facts seem to sho that some disturbance of diencephalic regulation is the essenti mechanism in the production of certain allergic states. Furth support for this theory may be found in the excellent resul obtained by irradiating the hypothalamic-hypophysial regio with small doses of x-rays in patients resistant to other form of antiallergic therapy. The fact that x-ray therapy is genuinel antiallergic, rather than antiasthmatic, antiurticarial, or ant eczematous, was clearly shown in the case of a patient in whom though asthma recurred during the premenopause, it was no precipitated by any of the substances that had been responsibl for her earlier attacks. Recognition of a deficiency in the centra autonomic nervous system and the complex physiochemical enzymatic, and hormonal adjustments under its control, togethe with the resulting reflex vasomotor, edematous, inflammatory and spasmodic disturbances, as the primary cause of allergy pro vides a better explanation for this condition than do the hepati or purely endocrine theories. Treatment, too, will be influence by the new orientation. Remedies now in use should be examined to see whether their effectiveness is not due in some instances to a previously unsuspected effect on the diencephalon, and new forms of therapy should be aimed at restoring the balance in the nervous centers, with preference given to the medicaments least likely to produce unfavorable side-effects or a later aggravation of the disorder.

Allergens in Vegetable Oils. A. F. Essellier, P. Jeanneret, H. R. Marti and H. Rosenmund. J. Allergy **26**:107-112 (March) 1955 [St. Louis].

Parenteral administration of vegetable oils may provoke sensitization, but the allergens contained in these oils are not specific for each kind of oil, since intracutaneous tests with different oils have been shown to yield cross reactions. The skin tests are followed by the same kind of local reactions when the oils are entirely refined, that is, completely freed of proteins, carbohydrates, and free fatty acids. Therefore, such impurities are not the causes of sensitization by natural vegetable oils, and the allergen is either a constituent of the oil itself, or a lipid with similar properties, which was not separated from the glycerides during the refining procedure. To test the hypothesis that triglycerides may be the allergens contained in vegetable oils, the allergenic properties of chemically pure synthetic glycerol-fatty acid esters were tested. Sensitization experiments were performed with chemically pure butyric acid, tributyrin, tripalmitin, and triolein. Serial intracutaneous injections of chemically pure, synthetic glyceryl trioleate (triolein) lead to the same allergic reactions as do vegetable oils, and, therefore, the sensitization by natural vegetable oils can be attributed to fatty acid triglycerides. This sensitization is not accompanied by eosinophilia.

Use of Cortisone or ACTH During Rapid Desensitization of Allergic Patients. E. L. Keeney, H. A. Weiss and C. F. Mohr. J. Allergy **26**:141-149 (March) 1955 [St. Louis].

A patient with diabetes insipidus had developed clinical manifestations of anaphylactic hypersensitivity following treatment with posterior pituitary substances. With the aid of cortisone, the allergic symptoms were controlled and held in abeyance during a period of rapid desensitization with vasopressin tannate in oil. It was possible within a relatively short time to discontinue cortisone therapy and proceed with the required amounts of vasopressin without further allergic reactions to the substance. Encouraged by these results and the implication that cortisone had not interfered with the mechanisms of desensitization, 66 patients, including 8 with the acquired and 58 with the hereditary type of hypersensitivity, were rapidly desensitized with the aid of corticotropin and cortisone. The patients with the acquired type of hypersensitivity included, in addition to the one mentioned with sensitivity to posterior pituitary substances, one with hypersensitivity to insulin, two with hypersensitivity to tetanus antitoxin, and four with hypersensitivity to tetanus toxoid. With the exception of one patient who was sensitive to tetanus toxoid and who received corticotropin during desensitization therapy, the other seven patients were given cortisone orally during desensitization. The two patients sensitive to tetanus antitoxin were given 200 mg. of cortisone within the 12 hours prior to desensitization and 400 mg. of cortisone during the course of desensitization therapy. Desensitization was carried out by starting with the lowest dilution to which they did not give a positive intradermal reaction (that is, if they reacted to 0.1 cc. of a 1:1,000 dilution of tetanus antitoxin, then desensitization was started with 0.1 cc. of a 1:10,000 dilution). Desensitizing doses were given in gradually increasing amounts at intervals of 20 minutes. Treatment was completed in about 14 hours, during which time one patient received 13,550 units and the other 50,000 units of tetanus antitoxin. Of the four patients who gave reactions to tetanus toxoid, three received only two doses of cortisone during desensitization, whereas the fourth received 15 mg. of corticotropin at the time of the first desensitizing dose, 15 mg. halfway through treatment, and 15 mg. at the completion of treatment. The patients with the hereditary type of hypersensitivity had asthma, rhinitis, or eczema either alone or in various combinations. They were desensitized with extracts of pollens, environmental allergens, and vaccines (stock, autogenous, or a mixture). Environmental allergens include extracts made from dust, feathers, animal danders, etc. The pollen extracts were standardized so that 1 cc. of concentrated solution contained 25,000 to 30,000 protein nitrogen units. Environmental extracts contained from 5,000 to 10,000 protein nitrogen units per cubic centimeter of concentrated solution. The concentrated vaccines contained 8 to 10 billion organisms per cubic centimeter. Depending on the degree of skin sensitivity to intradermal tests, desensitization was started with dilutions ranging from 1:1,000,000 to 1:10,000. Concomitant with desensitization therapy, 48 patients were given corticotropin intramuscularly alone; 2 received both corticotropin and cortisone, but not simultaneously; and 8 patients were given only cortisone. The total duration of treatment with corticotropin was 10 to 71 days and with cortisone 12 to 55 days. Cortisone and corticotropin administered simultaneously with specific desensitization did not alter the mechanism of desensitization. While the technique of combining rapid desensitization with the administration of corticotropin or cortisone has been successful, it is not suggested that it be given to all patients with active symptoms of hypersensitivity, but merely when the proper indications arise.

Autoimmunologic Disease. P. A. Cavelti. J. Allergy **26**:95-106 (March) 1955 [St. Louis].

The concept of autoimmunologic disease comprises conditions that are due to the pathogenic effects of antibodies produced by a patient against components of his own tissues. The existence of such conditions in man has been established particularly in the field of hematology. There is experimental evidence that other diseases also may be of this type. Serums prepared against practically every organ and tissue of the body have been studied. On injection in homologous recipients, such serums caused leukopenia, thrombocytopenia, and hemorrhagic purpura-like lesions. Likewise, hepatic lesions have been produced with antiliver serum. So-called nephrotoxic nephritis (Masugi nephritis) is easily obtained by injection of an antikidney serum prepared by immunization of animals of one species with kidney substance of another species. A single injection of nephrotoxic serum can produce a chronic, progressive renal disease extending over months or even years. This suggests that the noxious agent must persist or arise anew in the recipient's body. Autoantibody formation arising from modification of kidney substance damaged by the nephrotoxin, in such a way that it becomes an antigen, could conceivably be the cause. While ordinarily tissue constituents are not antigenic in the same animal or within the same species, modification of such constituents and especially combination with foreign proteins can render them antigenic. High titers of antibodies to rabbit kidney were obtained, and acute glomerulonephritis developed in rabbits injected with rabbit kidney mixed with killed streptococci. In analogy with the experiments with kidney tissue, rats were immunized with mixtures of killed streptococci and rat heart or connective tissue and antibodies were obtained reacting in vitro with extracts of rat heart and connective tissue. Histologically endocardial and myocardial lesions of the rheumatic type were found. Discussing human autoimmunologic disease Cavelti points out that many cases of hemolytic anemia are due to autoantibodies against the patient's red blood cells, that autoantibodies against leukocytes cause granulocytopenia, and that idiopathic thrombocytopenic purpura results from platelet autoantibodies. Autoantibodies reacting in vitro with extracts of human kidney have been found in the serum of patients with glomerulonephritis. The encephalitis following rabies vaccination with virus grown in rabbit brain appears to be a direct parallel to experimental allergic encephalomyelitis, and antibrain antibodies have been demonstrated in the patient's blood. It seems possible that autoimmunologic disease-producing mechanisms constitute a general immune-pathologic principle. Autoimmunologic disease presents a difficult therapeutic problem. Where infection is the inciting cause, its eradication in an early stage is effective, as in prevention of recurrences of rheumatic fever. Blocking or inhibition of antibody production or of the antigen-antibody reaction or a protection of the cells from the damaging effects of antigen antibody reactions are other possibilities. Perhaps adrenal cortical therapy acts by some of these mechanisms. The most desirable approach, however, would be to neutralize autoantibodies as they are formed by administration of the appropriate tissue antigen, particularly if the latter could be obtained as a true hapten, not capable of inciting antibody formation.

Tetanus Prophylaxis: The Duration of Protection from Active Immunization. E. S. Stafford. Surg., Gynec. & Obst. 100:552-554 (May) 1955 [Chicago].

Studies carried out on clinical tetanus indicated that the prophylactic use of a single injection of 1,500 units of tetanus antitoxin does not alter the mortality rate from tetanus. On the other hand, active immunization provides almost perfect protection against tetanus. Persons who have been actively immunized retain a measurable level of tetanus antitoxin in their serums for at least 11 years after the most recent booster injection. These individuals respond rapidly to a new booster injection of toxoid. If the present policy of administering the combined diphtheria-tetanus toxoid to children is continued, eventually nearly all Americans will possess active immunity against tetanus. Meanwhile, it is necessary to have a plan for the prophylaxis of tetanus that will meet all situations. The plan outlined by Stafford stresses the following points. 1. Measures to minimize the opportunity for growth of anaerobic bacteria should be the primary concern in the treatment of injuries. 2. A booster injection of 0.5 ml. of fluid tetanus toxoid should be given intramuscularly to persons known to have received the basic immunizing injections, including all veterans of the United States Armed Forces of and since World War II and many children born since 1937. 3. All other patients are to be divided into two categories: those not sensitive and those sensi- ve to horse serum, as demonstrated by suitable means (the junctival test is preferred). Those not sensitive should receive 00 units of tetanus antitoxin intramuscularly, and those who are sensitive to horse serum should not be given tetanus antitoxin in horse serum but should receive an injection of 0.5 ml. of fluid tetanus toxoid as the initial step in immunizing them. These individuals should then be observed carefully for three weeks, so that if tetanus develops the earliest signs may be detected and prompt treatment instituted. A second injection of toxoid is given after one month, followed four to six weeks later by a third injection. These patients are thus safeguarded against future risk from either tetanus or horse serum. Active immunization against tetanus should be provided particularly to those who live in rural areas and to those whose occupation exposes them to injury. The value of tetanus antitoxin in treating clinical tetanus is unquestioned. Recent work suggests that blood serum drawn from immunized donors of high titer constitutes a readily available source of potent antitoxin. Thus, if tetanus should develop in a patient who, being sensitive to horse serum, has not received prophylactic antitoxin, there is at hand a means of combating the disease at once.

Alterations of Water-Salt Balance in Insufficiency of Posthypophysis and Their Importance in Differential Diagnosis Between Diabetes Insipidus and Psychogenic Polydipsia. G. Gobbato and L. Lacroix. Minerva med. 46:437-445 (Feb. 17) 1955 (In Italian) [Turin, Italy].

The water-salt balance was studied in six patients with diabetes insipidus before and after the administration of extract of the posterior lobe of the hypophysis (the antidiuretic hormone). Significant changes were not present in the glomerular filtrate and the blood urea clearance of these patients. Administration of the antidiuretic hormone in doses of 0.1 to 0.13 units per kilogram of body weight by the intramuscular route caused a marked reduction in diuresis without, however, influencing in any way the glomerular filtrate. The density and the osmotic pressure of the urine were increased, but the renal elimination of the chlorides was not greatly influenced. In four patients there was a notable increase in the total concentration, and therefore in the osmotic pressure, of the plasma and a corresponding proportional increase of the chlorides in the blood. The volume of the extracellular fluids was slightly reduced. The posterior lobe of the hypophysis is highly sensitive to changes in the osmotic pressure of the plasma: an increase in its osmotic pressure stimulates, whereas a decrease inhibits, the secretion of the antidiuretic hormone thus causing a state of polyuria or oliguria respectively. By controlling the renal excretion of water, this lobe regulates also the plasma isotonic pressure. This regulating mechanism is no longer present in patients with diabetes insipidus in whom a decreased or absent secretion of the antidiuretic hormone causes a permanent polyuria. This is followed by a state of simple dehydration with an increased osmotic pressure of the circulating fluids. The increased osmotic pressure of the plasma can no longer stimulate the impaired posterior lobe, polyuria remains unchanged, a tremendous thirst torments the patients, and enormous quantities of fluid are ingested. There are some forms of marked polyuria that are secondary to psychogenic polydipsia and that are difficult to differentiate from the polyuria of diabetes insipidus. In psychogenic polydipsia a great intake of fluids causes a state of hydremia with a decrease in the osmotic pressure of the plasma and therefore an inhibition of the excretion of the posterior lobe of the hypophysis, and the onset of polyuria. Thus in diabetes insipidus polydipsia is secondary to polyuria, whereas in psychogenic polydipsia the reverse is true. Another feature for the differential diagnosis between the two conditions lies in the fact that the urinary flow decreases in patients with psychogenic polydipsia during the intravenous injection of the antidiuretic hormone, whereas in patients with diabetes insipidus it decreases after the injection.

Hereditary Diabetes Insipidus: Report of 20 Cases in Seven Generations. E. L. Levinger and R. F. Escamilla. J. Clin. Endocrinol. 15:547-552 (May) 1955 [Springfield, Ill.].

The occurrence of hereditary diabetes insipidus is reported in a 26-year-old woman, whose urinary output was 13½ quarts (12,771 cc.) daily, and who had a positive reaction to beta-hypophamine (Pitressin) when subjected to the Carter-Robbins test. The course of the disease was complicated by rheumatic heart disease with decompensation and, later, by chronic diarrhea of undetermined origin. The latter improved, and the bothersome nocturia ceased after reinstitution of antidiuretic therapy with 15 mg. of posterior pituitary powder given by nasal insufflation two to four times daily. This therapy had been discontinued temporarily to offset the tendency toward fluid retention from congestive failure. The patient is now comfortably maintained with two or three nasal insufflations of the powder daily, in addition to routine administration of digitalis for her cardiac condition. She stated that the "water habit" was a family characteristic that had been manifested by her mother, grandmother, great-grandmother, and great-great-grandmother, as well as by her maternal aunts and three of her four uncles. Her three children were also affected. Investigation by correspondence and interviews elicited a family tree with 20 cases in seven generations. Genetic analysis showed that the transmission in this family was by simple dominance, by a conditionally dominant gene with poor penetrance without evidence of sex-linkage. This agrees with the opinion expressed in most reports of similar series in the world literature.

Sparganosis: Second Case Reported from South America: First Case Observed in Uruguay. J. J. Osimani and R. Peyrallo. Arch. urug. med. 46:139-148 (March-April) 1954 (In Spanish) [Montevideo, Uruguay].

Sparganosis in human beings is frequent in the Far East and rare in the Western Hemisphere. In the Far East it is found mainly in frogs. A frequent cause of infestation of people is the use of frog meat applied to the eyes or wounds for its alleged therapeutic value. Spontaneous infestation of cats, dogs, members of the weasel family, and rodents has been reported from several countries in the Western Hemisphere. Six cases of sparganosis in human beings have been reported from the United States. They include the only case of proliferant sparganosis ever reported in the Western Hemisphere. The proliferant form follows its course with gross multiplication of larva simulating metastases of malignant tumors and with diffuse involvement of the tissues of several structures. This form is extremely rare. The parasitic infestation of nonproliferant forms is acquired by drinking water contaminated with crustacean of the Cyclops genus harboring procercoid larvae, contact of the skin with contaminated water, or eating meat of infested mammals or fowls. The case reported by the authors is the second one published from South America and the first one observed in Uruguay. The patient, an adult woman, was well until she visited a rural zone and consumed water from a well. A few months later an abscess developed on her leg. After surgical opening of the abscess and complete elimination of pus, a mobile larva appeared at the surgical wound. It was removed and put in alcohol. At microscopic examination it appeared to be a larva of the Diphyllobothrium erinacei 48 mm. long, 1 mm. wide, and with a scolex 1.5 mm. long. Ten months after the operation the patient was in good health. No other parasites were found in the feces either before or after the operation. The authors recommend that in similar cases the larva be preserved alive to be used in experimental infestation of cats and dogs so that the adult form of the parasite may be identified.

Contribution to Study of Treatment of Brucellosis with Hieracium Pilosella. E. Greib and P. Duquénois. Presse méd. **63:** 642-644 (April 30) 1955 (In French) [Paris, France].

Fourteen patients with brucellosis were treated with an extract from the plant Hieracium pilosella, with good results. As has recently been discovered, the fresh plant contains, in addition to bitter and diuretic principles, antibacterial substances derived from umbelliferone. The activity of these substances has been demonstrated in vitro. Like umbelliferone, the methyl-umbelliferones and hydroxy-6 umbelliferone have a bacteriostatic action on Brucella abortus, Br. melitensis, and Br. suis. The drug was administered orally to the patients in question. This method was simple, and no intolerance was noted. Response to therapy was prompt. The treatment should be continued for at least a month; no relapses occurred after such treatment. The success of this trial, especially considering that Hieracium pilosella therapy was effective in patients with brucellosis resistant to other antibiotics and in patients with complications not permitting vaccine therapy, warrants further use of the drug.

SURGERY

Controlled Cross Circulation for Direct-Vision Intracardiac Surgery: Correction of Ventricular Septal Defects, Atrioventricularis Communis, and Tetralogy of Fallot. C. W. Lillehei. Postgrad. Med. **17:**388-396 (May) 1955 [Minneapolis].

Of 30 patients with congenital cardiac defects who underwent operations, all involving open cardiotomy, which were performed since March, 1954, with the aid of controlled cross circulation, 21 had interventricular septal defects, 6 tetralogy of Fallot, 2 atrioventricularis communis, and one isolated infundibular pulmonic stenosis. The only special equipment necessary for controlled cross circulation is a pump unit consisting of an electric motor coupled to a speed changer, the latter being connected to the pump itself. This pump accurately controls the reciprocal transfer of blood between patient and donor. During the interval of the patient's total cardiac bypass, the pump circulates equal amounts of oxygenated blood from the donor's femoral artery to the patient's aorta and, at the same time, an exactly equal amount of venous blood from the patient's venae cavae to the donor's saphenous vein. All the patients had their congenital heart defects completely corrected by the surgeon working within the open heart under direct vision with sufficient time to permit the anatomic correction of the defect or defects present, thus restoring their circulation to normal physiologically. The concept that relatively large quantities of blood flow are needed for safe maintenance of the vital organs during total cardiac bypass was shown to be erroneous. Experiments carried out on dogs showed that the animals survived long periods of complete venal cava occlusion provided only that the amount of blood flowing through their azygos vein was allowed to enter their hearts. This azygos flow was measured, and it was found to be only 8 to 14 cc. per kilogram of body weight per minute, or approximately one-tenth of the so-called resting or basal cardiac output necessary for safe maintenance of the vital centers of the body during total cardiac bypass. Total cardiac bypass at very reduced blood flows, at normal body temperature, based on the experimental studies of the azygos flow has been demonstrated to be perfectly safe in man. The vast simplification made feasible by this need for relatively small quantities of blood for perfusion during total cardiac bypass is the physiological basis of this method and the keystone of success in the field of open intracardiac surgery by means of total cardiac bypass. Direct suture of septal defects proved to be the simplest and most effective method of closing these abnormal openings; of the 21 patients with this type of defect 14 survived and 7 died from 6 to 11 hours after the operation. Ventricular fibrillation did not develop in any of these cases whether the results were successful or unsuccessful. In the patients with tetralogy of Fallot the surgical procedure consisted of suture closure of the ventricular defect with resection of infundibular stenosis. Of the six patients operated on, three died. Suture closure of both atrial and ventricular defects with correction of valvular deformity was done in the patients with atrioventricularis communis; one of the two patients died. Resection of infundibular muscle was the procedure carried out in the patient with isolated infundibular pulmonic stenosis. Conduction difficulties were not a serious problem in intracardiac procedures because of close attention to two factors important for the well-being of the cardiac conduction system, namely, normal body temperature and a well-oxygenated myocardium. It is emphasized that once the myocardium is relieved of its pumping burden, as occurs as soon as venous inflow stasis is effected, it may remain well oxygenated on a mere trickle of oxygenated coronary flow.

The Repair of Experimental Interventricular Septal Defects, During Hypothermia, with a Molded Polyvinyl Sponge. F. J. Lewis and M. Taufic. Surg., Gynec. & Obst. **100:**583-590 (May) 1955 [Chicago].

The authors report a successful method of repairing experimental defects of the ventricular septum with a molded, polyvinyl, plastic sponge. The molded sponge can be inserted rapidly and will be held in place by its own elasticity and one fixation suture. It causes little reaction. The ability of the heart to tolerate the material was confirmed by the authors. Each of the adult mongrel dogs used had two experimental operations, both through the right atrium—one to produce the defect and a second to close it. The defect was made in the high septum by inserting a plastic tube through a stab wound, made just behind the septal leaflet of the tricuspid valve. No tissue was removed. At a second operation the plastic tube was removed and the resulting defect was repaired by inserting the molded, plastic sponge and fixing it in place with one stitch. All of the operations were done under hypothermia. Thirteen of the 15 dogs subjected to this experimental operation have survived. Connective tissue grew into the plastic sponge so that there resulted a firm scar covered with endothelium. There was little inflammation in the adjacent septum. Although this experimental operation was successful, it cannot be concluded that congenital defects may be repaired as satisfactorily by the same method. The experimental defect described here is more nearly like high human defects than other that have been used but it is not identical with them. It is located in the same position but its edge, as formed by the plastic tube, is of almost uniform thickness all around, while the edge of the human defect is thin in one portion and thick in another. The experimental defect does not have the impressive variability in size and shape that is characteristic of congenital defects. Sponge devices can be designed to fit openings of different size and configuration, but all this may not be necessary. Human ventricular septal defects have recently been repaired by simply using interrupted silk stitches. In the experience of these authors, a suture approximation has been satisfactory for the repair of atrial septal defects. It may also prove to be the best method for the complicated defects of the ventricular septum.

Resection or Collapse in the Surgery of Pulmonary Tuberculosis? K. M. Shaw. J. Irish M. A. **36:**109-111 (April) 1955 [Dublin, Ireland].

This report concerns 193 consecutive cases subjected to thoracoplasty or resection. There were 26 pneumonectomies, mainly for totally destroyed lung, with a mortality of 7.7%, and 73 lobectomies and segmental resections, with a mortality of 1.4%. Surgical collapse was accomplished entirely by thoracoplasty. It was carried out in 94 cases, and there was no mortality (fatalities occurring within three months of operation). The classical selective 5-8 rib Semb thoracoplasty with extensive extrafascial apicolysis was the routine operation, the only other operation used being a one-stage "roof" thoracoplasty of the Holst type. The tendency has been to limit the extent of the rib resection more than formerly, 43 cases having had not more than 5 ribs resected. This limitation has been due in part to the more localized type of disease encountered following prolonged drug therapy, but also to a desire to preserve functioning lung. Three patients required lobectomy or segmental resection following 5-rib thoracoplasty, and two required pneumonectomy following 8-rib thoracoplasty; but as the follow-up period has been of only three months in some cases, these figures are likely to increase. The indications for lobectomy and segmental resection are in many cases clear-cut; it is generally accepted that lower lobe disease and localized unstable solid lesions are best treated by resection; however, a large group of cases can be treated satisfactorily by either thoracoplasty or resection, as far as immediate control of disease is concerned. Uncomplicated segmental resection results in no appreciable loss of pulmonary function, and removal of a destroyed lobe is accompanied by less functional loss than the most limited thoracoplasty. A further factor is the cosmetic result of operation. An extensive thoracoplasty with scapular embedding is mutilating and requires considerably more psychological adjustment on the part of the patient than does resection. Perhaps the most important factor in the increasing use of resection is the altered situation following prolonged antibiotic and chemotherapeutic treatment. Filled, inspissated, and small thick-walled residual cavities, ronchial cold abscesses, and multicentric caseous pneumonic ci are among the types of lesion seen more frequently than rmerly, and are suitable for resection rather than thoracolasty. Progressive reduction in the mortality for resection has almost eliminated the safety factor as an argument for thoracoplasty. The ultimate solution of the controversy must await the publication of adequate numbers of long-term results, but meanwhile there is sufficiently encouraging evidence to continue with the cautious use of resection in cases technically suitable for the procedure.

Survival in Breast Cancer Cases in Relation to the Structure of the Primary Tumor and Regional Lymph Nodes. M. M. Black, S. R. Opler and F. D. Speer. Surg., Gynec. & Obst. **100:**543-551 (May) 1955 [Chicago].

In 179 patients with breast cancer followed either to death or for a minimum of five years postoperatively, length of survival was studied in relation to the microscopic structure of the primary tumor and the regional lymph nodes. Excellent survival rates were encountered when the tumors were characterized by highly differentiated structure, lymphoid infiltrate in the primary tumor and sinus histiocytic reactions in the regional lymph nodes. In tumors lacking these features a very low rate of five year survivals exists. These relationships were obtained without regard to the age of the patient or the presence or absence of axillary node metastasis. The findings are consistent with the hypothesis that the lethality of breast carcinoma varies as a direct function of the growth potential of the primary tumor as reflected in the nuclear structure, and inversely as a function of tumor retarding factors of the host visualized as sinus histiocytosis of the regional lymph nodes and lymphoid infiltrate in the primary tumor.

Some Aspects of the Respiratory Function and Some Metabolic Findings During Immediate Postoperative Course Following Surgical Collapse Therapy. D. D'Arcangelo and W. Morgagni. Chir. torac. **8:**47-62 (Feb.) 1955 (In Italian) [Rome, Italy].

The authors studied 13 patients with pulmonary tuberculosis in whom thoracoplasty was performed and 2, in whom an extrapleural pneumothorax was instituted, the morning before the operation and every day during the first postoperative week. They found that after the operation the respiration was more rapid and slightly less deep; the pulmonary ventilation was slightly increased; the oxygen consumption and the pulmonary coefficient of oxygen utilization were increased; the elimination of carbon dioxide was decreased; the respiratory quotient was reduced; the azotemia was increased; the alkali reserve was reduced; and there was a heavy urinary output of total nitrogen, of urea and ammonia nitrogen, and of creatinine, while the renal excretion of the chlorides was diminished. These changes in the respiratory function and the metabolic alterations were present during the immediate postoperative course and tended to return to the initial values within six to seven days. The immediate postoperative course of surgical collapse therapy in patients with pulmonary tuberculosis can be divided into three phases. During the first phase (first, second and third days) the above-mentioned changes are marked; during the second (fourth and fifth days) there is a gradual return to the initial values; and during the third (sixth and seventh days) the values become stationary. The authors suggest making a complete preoperative investigation of the most important organic functions (cardiovascular, respiratory, hepatic, and renal) in tuberculous patients before subjecting them to surgery, to detect eventual functional insufficiencies, reach a better diagnosis, choose the best treatment, and thus prevent a difficult and sometimes fatal postoperative course.

Appendicitis in Persons over Sixty Years of Age. H. A. Theis. Zentralbl. Chir. **80:**463-471 (No. 12) 1955 (In German) [Leipzig, Germany].

During the three years 1951 to 1953, inclusive, 202 patients over 60 years of age were referred to a surgical clinic in Hamburg with a diagnosis of appendicitis. In 71 of these patients the diagnosis of appendicitis was erroneous: in 19 cholecystitis was found, in 13 cholelithiasis, in 7 ureteral calculi, in 6 gastritis or enteritis, in 5 pneumonia, in 5 intestinal infarct, and in 4 cystopyelitis; in others, lesions such as duodenal ulcer, ileus, uterine carcinoma, and sciatica were found. This large number of erroneous diagnoses is understandable, when it is considered that the symptoms of appendicitis in elderly persons are not as typical as in younger patients. Appendectomy was performed on 101 of the patients. In 5 of these the appendix was free from pathologic changes, although their symptoms were typical of appendicitis. The appendix showed signs of inflammation in 10.2% of the patients, phlegmonous changes in 43.2%, perforation in 27.3% (5 of these patients had diffuse peritonitis) and in 19.3% the appendix was obliterated or fibrotic. In only a few of these patients had the clinical symptoms suggested these severe pathologic changes. Conservative treatment was used in 30 patients, either because their general condition was poor or the appendicitis was not acute. The leukocyte count was less than 10,000 per cubic millimeter in 57.1% of the patients; in 28.5% it was between 10,000 and 15,000 per cubic millimeter; and in 14.3% between 15,000 and 20,000 per cubic millimeter. None of these patients had a leukocyte count in excess of 20,000 per cubic millimeter.

Surgical and Pathologic Classification for Cancer of the Cervix: An Evaluation of 250 Cases. J. V. Meigs and W. Liu. Surg., Gynec. & Obst. **100:**555-558 (May) 1955 [Chicago].

The surgical and pathological classification of cancer of the cervix proposed by Meigs and Brunschwig is based on the findings at the time of radical surgery and from the pathological specimen. It is intended for more precise evaluation of the surgical treatment. The following classification is suggested: class O—carcinoma in situ, also known as preinvasive carcinoma; class A—carcinoma strictly confined to the cervix; class Ao—after a positive biopsy of infiltrating carcinoma no tumor is found in the cervix in the surgical specimen; class B—carcinoma extending from the cervix to involve the vagina and corpus (vaginal or uterine extension may be by direct spread or metastatic); class C—carcinoma involving paracervical or paravaginal tissue by direct extension or by lymphatic vessels, or in nodes within such tissues; class D—lymph vessel and node involvement beyond paracervical and paravaginal regions; class E—carcinoma penetrating the serosa, musculature, or mucosa of the bladder or the colon or rectum; and class F—carcinoma involving the pelvic wall. This surgical and pathological classification was applied to 460 patients with cancer of the cervix who were treated with radical pelvic surgery by the staffs of several hospitals between February, 1939, and December, 1953. There were 238 cases of radical hysterectomy with pelvic lymphadenectomy and 12 cases of pelvic exenteration performed five or more years ago. These 250 cases of cancer of the cervix were classified according to the surgical and pathological classification, and the five year results are presented. The five year survival rate for the entire series was 72%. The five year result for all patients in class O was 100%; class A, 82%; class Ao, 93%; class B, 82%; class C, 50%; class D, 37%; class E, 10%; and class F, 0%. The five year survival rate of 160 patients who received no preoperative treatment of any type was 74%; and for patients who had preoperative treatment of one type or another, 67%. Class B seemed to be a mark beyond which the five year survival rate decreased sharply. When the cancer extended vertically from the cervix to the vagina, or to the corpus, or in both directions, the prognosis was good (82% five year survival rate). If the carcinoma spread laterally to involve the paracervical and the paravaginal tissues or to the lymph nodes in these regions (class C or class D), the prognosis was quite different (50 and 37% five year survivals). The authors suggest that emphasis should be made clinically on the separation of stage IIa and stage IIb cases in the international classification of cancer of the cervix. The surgical and pathological classification can be used advantageously in surgically treated patients.

Chondromalacia of the Patella. J. S. Thiemeyer. Virginia M. Month. 82:225-228 (May) 1955 [Richmond, Va.].

The occurrence of chondromalacia of the patella, a degeneration of the articular surface of the patella as evidenced by softening, fibrillation with occasional fissuring, and erosion of cartilage, is reported in 21 patients between the ages of 19 and 50 years, 10 (48.5%) of whom had a history of trauma. Four patients had a history of having sustained a fractured patella, and three had a history of a lateral clipping injury, such as sustained in football. Eight patients had no history of any previous trauma. Pain, swelling, and instability were the most common symptoms. Although crepitation, either audible or palpable and usually subpatellar, has been emphasized as the most characteristic sign of the disease, it was observed in only eight patients (38%). Crepitation indicates cartilage degeneration, but the absence of crepitation does not rule it out, for effusion of the knee, which is often present, might separate the contacting surfaces. Pain on pressing or moving the patella by hand in the trough was observed in 11 patients (55%). Ten patients had had previous surgery consisting of menisectomy in 3, of patella shaved in 2, open reduction of fractured patella in one, synovectomy in one, and type unknown in two. All 21 patients were operated on, and in addition to chondromalacia six other types of abnormal condition of the knee, including mirror image on medial femoral condyle, pressure of loose bodies, osteochondritis dissecans, chronic synovitis, associated medial meniscus injury, and nonunion of fractured patella with fibrous scar tissue throughout the joint, were observed. There is no consensus as to the type of surgery to be performed, including partial or complete chondrectomy and patellectomy, but the author considers patellectomy as the treatment of choice when there is a definite history and pathological evidence of previous fractured patella with rough fragments within the joint.

Free Nail Grafting. C. R. McCash. Brit. J. Plast. Surg. 8:19-33 (April) 1955 [Edinburgh, Scotland].

In 10 cases of nail grafting McCash used three different methods of free grafting; the partial nail graft was used in 4. This procedure is similar to that described by Sheehan using the central section of the great toe nail with nail bed and matrix, but with the difference that the graft extends back to the root of the donor nail to include all the germinal matrix available. The composite nail graft, which was used in three patients, is taken from one of the lesser toes and consists of the complete nail, nail bed, matrix, the nail fold on each side and at the root, and a thin shaving of the upper surface of the terminal phalanx. The complete nail graft, which was also used in three patients, is taken from one of the lesser toes and consists of the nail, nail bed, and matrix but without bone or surrounding skin. The results obtained in these 10 patients indicate that the nail with its germinal matrix behaves like any other epidermal structure, being freely transferable on the same patient, and can retain in its new site its peculiar property of forward growth. In every patient the graft took well initially, becoming vascularized within the first two weeks. Of the three methods of grafting, each yielded one really good result, and these were in the patients in whom exfoliation did not occur. Although in all but one patient a new nail grew after exfoliation, some were brittle and fragmented and others horny in character. The ultimate success from a cosmetic standpoint appears to depend on a complete take of both the germinal and sterile matrix, a good digital blood supply, and a smooth surface beneath the graft. A careful contouring of the recipient bed combined with firm fixation is therefore important. A wire mattress suture placed vertically through the phalanx and center of the graft and tied over two buttons ensures intimate contact between the surfaces. The one button rests on the nail and the other on the finger pulp. This method has the advantage that should the tension prove too great between the buttons it can be eased by untwisting the end of the mattress suture. This suture has been used with satisfactory results in recent cases.

Some Observations on Antibiotic Resistance in a Hundred Strains of "Staphylococcus Aureus" in a Plastic Surgery Unit. P. A. Bramley and J. L. Clarke. Brit. J. Plast. Surg. 8:75-81 (April) 1955 [Edinburgh, Scotland].

The use of antibiotics, both locally and generally, is probably more frequent in plastic than in most other forms of surgery, and the problem of resistance is correspondingly greater. Cultures from 100 clinical micrococcic (staphylococcic) infections in the patients of a plastic unit were tested for sensitivity to seven antibiotics by the method described by Bowie and Gould and checked by the serial tube dilution method. Bearing in mind that one cannot claim any great precision in reporting in vitro sensitivity tests and that they must be interpreted in the light of possible serum levels of antibiotic and in relation to the standard Oxford micrococcus, the following results are reported: 68% were fully resistant to penicillin, 64% to streptomycin, 67% to chloramphenicol, 37% to chlortetracycline and oxytetracycline, and no strains resistant to carbomycin and erythromycin were found. Thirty-seven per cent of the strains were insensitive to all the antibiotics, with the exception of erythromycin and carbomycin. Phage-typing showed that the resistant organisms belonged to three well-defined types only. In five patients an apparent change of sensitivity of infecting organism was found to have been due to a cross infection. A small group of micrococcic infections in the general population was tested, and all were fully sensitive to all the antibiotics. These results emphasize the necessity of laboratory control of antibiotic treatment of hospital patients and the care that must be exercised in the selection of antibiotics for prophylactic use. It appears that in the treatment of micrococcic infections in the general population such close control by laboratory methods is unnecessary.

Storage and Use of Arterial Grafts. R. E. Horton. Brit. J. Plast. Surg. 8:9-18 (April) 1955 [Edinburgh, Scotland].

Grafts that were used in the patients here described were prepared by the freeze-drying method and were stored at -79 C. Arterial grafting is now being used in a variety of circumstances in which arterial reconstruction is indicated. Reports from Korea have shown that the prognosis of femoral and popliteal artery injuries has been greatly improved by grafting. Peripheral aneurysms, in the past, were generally treated by ligation to encourage complete clotting within the aneurysm. The use of an arterial graft makes radical treatment possible without detriment to the circulation. In the patient described to illustrate the use of an arterial graft in cases of aneurysm, the artery was transected above and below the aneurysm, an arterial graft was inserted, and the sac of the aneurysm was closed over the graft. The peripheral pulses were felt at the end of the operation, and the limb circulation remained normal. Arterial grafting is also used in treating primary arterial thrombosis. Furthermore, the resection of some neoplasms may require arterial repair. If, in a patient with fibrosarcoma of the thigh, resection involves sacrifice of the femoral vessels, restoration of the arterial flow will insure viability of the limb. In a patient with atheroma, operation on the main arteries of the leg is justifiable only when the disease is severe in the limbs and spares the coronary and cerebral circulations. Operation is considered in intermittent claudication only when the disability is severe enough to cause interference with work, but the proportion of patients suitable for operation is small. Those with rest pain are particularly suitable for grafting, because the alternative is a major amputation. Those with gangrene usually are not suitable for grafting, except when the reduced blood flow is due to an iliac and a femoral block. In such a patient grafting the iliac artery gives a strong pulsatile flow to the profunda femoris artery and this may be sufficient to maintain the foot through the anastomosis round the knee joint. Although there have been disappointments, 16 of 26 arterial grafts were immediately successful, but only time will tell what the late results of grafting will be.

The Surgical Treatment of Human Hypertension. J. E. Thompson, R. D. Bush, G. P. Whitelaw and R. S. Smithwick. *J. Am. Geriatrics Soc.* 3:248-258 (April) 1955 [Baltimore].

Of 1,733 patients with persistent hypertension admitted to the Massachusetts Memorial Hospitals in Boston, 1,226 were operated on and 467 received medical treatment and served as controls. The patients in both groups were followed up for five years or more. The prognosis for a patient with hypertension varies according to the status of his cardiovascular system. Each of the various factors that have a bearing on prognosis, such as age, cerebrovascular accidents, abnormal electrocardiogram, enlarged heart, impending congestive failure, moderate angina, and phenolsulfonphthalein concentration in the urine, was assigned a numerical value, and in every patient the existing factors were totaled, resulting in the numerical grade for the patient. The patients then were classified in four groups; if the numerical grade was less than 4, the patient was placed in group 1 or 2; if the numerical grade was 4 or more, the patient was placed in group 3 or 4. Patients in group 1 had the least severe cardiovascular disease, whereas those in group 4 had the most severe degree of cardiovascular damage. Of the 1,733 patients, 1,525 (88%) had manifest vascular disease either in the eyes, heart, kidney, or brain and were therefore in the stage of hypertension when cardiovascular complications had begun to occur. The average age of the surgical patients was 42 years and that of the medical patients was 45 years. The mortality rate at five years for the surgical patients was 19%, and that for the medical patients was 54%. Thoracolumbar splanchnicectomy was the surgical procedure employed in 93% of the surgically treated patients with essential or malignant hypertension; an additional 7% underwent transthoracic sympathectomy and splanchnicectomy. The operative mortality after splanchnicectomy was 0.7% in patients of group 1, 1.4% in group 2, 4.3% in group 3, and 10.9% in group 4, with an over-all operative mortality of 2.8%. Total and subtotal adrenalectomy and nephrectomy are the other current surgical measures that are available for the treatment of the small group of patients with hypertension caused by pheochromocytoma, adrenocortical adenoma, unilateral renal disease, coarctation of the aorta, and Cushing's disease (adrenal cortical hyperfunction). Splanchnicectomy is the treatment of first choice for male patients and certain female patients with essential or malignant hypertension in group 1, and it is also the treatment of first choice for male and female patients in group 2 and 3. Splanchnicectomy is justifiable in male and female patients of group 4 with severe cardiovascular disease provided renal function is still adequate and cerebral damage is not too extensive. The late results are poor at best in most patients of group 4 despite surgical procedures, either alone or combined with the best medical treatment. It is therefore urged that splanchnicectomy be utilized before the hypertension progresses to the group 4 stage.

Troubles in Gallbladder Surgery. H. G. Bell. West J. Surg. 63: 192-195 (April) 1955 [Portland, Ore.].

During the past 24 years 1,335 cholecystectomies were carried out at the University of California Medical Center. This number included 1,085 simple cholecystectomies and 250 cholecystectomies that were combined with exploration of the common duct. Only one of the patients in whom simple cholecystectomy was done returned within a three-year period with evidence of a common duct stone. Unfortunately, this state institution not have a long-time follow-up on all patients with sin cholecystectomy, so that it is not definitely known whether n should have been subjected to exploration of the common d The mortality rate was 1.01% in simple cholecystectomy, c pared to 2% in the patients who required exploration of common duct. It was not possible to make cholangiogr routinely, and Bell feels that the routine use of this metho not necessary, especially since it adds to the length and hazard of the operation. Of the 250 patients in whom common duct had been explored 13 required reoperation six of these, stones were found, two had cirrhosis of the l and five had strictures or spasm of Oddi's sphincter. Seventy- patients required further surgical treatment after previous o ations at other hospitals. The author makes no attempt to dis all possible complications of biliary tract surgery, but str two points: First, surgery of the gallbladder should be done since there is no real medical treatment, and an incision sh be used that will provide adequate exposure. Second, in m cases common duct exploration is being done unnecess and unwisely. He does not believe that any one can exp dilate, or curet a chronically strictured tube without ca further scarring and narrowing of that tube. Unless there very definite indication for exploration, he prefers to leav common duct alone, particularly if the duct is chroni thickened.

Ulcerative Colitis Treated by Total Colectomy and Ileo-R ***Anastomosis.*** *S. Aylett. Brit. M. J. 1:1060-1062 (April 30)* [London, England].

Ten female and seven male patients with ulcerative c between the ages of 10 and 51 years, in whom the rectum not already been irretrievably damaged by gross fibrosis perirectal suppuration and fistula formation were subject a total colectomy and ileorectal anastomosis. Although i first few cases the ileum was anastomosed to the rectum upper third the establishment of a safety-valve opening i left iliac fossa necessitated the retention of the lowermost p of the pelvic colon. This severely diseased portion of the intestine may be included in the excision if the rectum is lized as an initial stage in the operation by division of the part of its lateral ligaments and its posterior attachments. the ileorectal anastomosis has been carried out the colec is completed by transecting the rectum through its upper about 2 cm. above this anastomosis. It is then possible, result of the mobilization of the rectum, to exteriorize its upper end through the lowermost part of the paramedia sion to act as a safety valve. Such a safety valve may mi the danger of a breakdown of the line of anastomosis, ma it is through a diseased rectal wall. This proctostomy te undergo spontaneous closure more readily than a colosto the left iliac fossa, so that the necessity for its closure by o tion is required less often. Most of the patients were ope on in one stage and in only one of the last 10, a grave patient with an acute case, the colon was excised and ileos established as an initial stage of the treatment, the upper e the rectum being exteriorized and restoration of continuity delayed until the patient had been restored to good health but one of these severely and sometimes desperately ill pa returned to good health and to full work. These results see indicate that the method of treatment described is a satisfa one. The follow-up varying from four months to three yea short, and the author's series is not large. Nevertheless in no has the disease flared up in the remaining rectum, and re proctoscopic examination has shown that resolution of inflammatory changes existing before the operation has t place. Of two additional patients in whom the caecum see at operation to be so little diseased that in each it was reta and the anastomosis was effected between it and the rectum, remained perfectly well for 18 months, while the other h severe and uncontrollable hemorrhage four months after operation. On repeated operation the caecum was found t acutely inflamed; it was resected and an anastomosis was formed between the terminal ileum and rectum. Unless caecum is absolutely normal no attempt should be made retain it.

Emergency Pneumonectomy for Uncontrollable Hemoptyses of Tuberculous Origin. L. Sommo. Minerva chir. **10**:128-134 (Feb. 15) 1955 (In Italian) [Turin, Italy].

A successful emergency pneumonectomy for massive hemoptyses complicating pulmonary tuberculosis in a 25-year-old man is reported. A left extrapleural pneumothorax and a pneumoperitoneum had been instituted to control the hemoptyses but both had failed to do so. Large doses of coagulation-stimulating agents had also been given but with little or no benefit. Because of the patient's poor general condition, a pneumonectomy of the left lung was performed. It revealed a large cavity, which had eroded a subsegmental branch of the artery of the apical segment of the lower lobe. The histological diagnosis was disseminated, nodular, fibrocaseous, and fibrocaseous tuberculosis of the left lung, mainly of the lower lobe; active cavitary lesion with caseous walls in the apical segment of the lower lobe with signs of recent posterobasal hemorrhage; and bronchogenic hemorrhagic flooding of the entire parenchyma of the lower lobe. After 15 days the patient was discharged from the surgical ward at which time roentgenograms revealed no lesions in the contralateral lung. Although pulmonary resection is not the treatment of choice for massive, uncontrollable hemoptyses in patients with pulmonary tuberculosis, it can become (as in this case) a life-saving measure in patients in whom other methods of treatment have failed. This method has not, however, found wide acceptance because of (1) the risk involved in performing the operation when the patient is in shock; (2) the possibility of massive tracheobronchial flooding followed by death owing to internal submersion; and (3) the possibility of bronchogenic spread of the disease. The author's case and other reported cases show that pulmonary resection can be performed successfully in patients in whom massive hemoptyses complicate pulmonary tuberculosis.

The Problem of Nutrition Following Total Gastrectomy. A. H. Johnson, H. J. McCorkle and H. A. Harper. Gastroenterology **28**:360-366 (March) 1955 [Baltimore].

The effect of total gastrectomy on the nutritional status of 36 patients operated on at the University of California hospital was studied. Of the 36 patients, 31 underwent total gastrectomy for carcinoma of the stomach, 3 for benign gastric ulcer, one for a benign gastric polyp, and one for a lymphosarcoma. Total gastrectomy was performed on 116 adult dogs, and the animals were studied with respect to their postoperative nutritional status. The clinical and laboratory observations made on these gastrectomized patients and animals indicate that alimentation time is decreased after complete gastrectomy. The amount of carbohydrate, fat, and protein absorbed is much less than normal. There is a tendency to regain some weight and maintain better nutrition when continuity is maintained between the esophagus and duodenum. This can be accomplished either by direct anastomosis between the esophagus and duodenum or by transplantation of isoperistaltic segments of colon or jejunum between the esophagus and duodenum. Digestion and nutrition appears to be better in patients with isoperistaltic colon segment transplants, and this procedure seems to be worthy of further trial even though it is technically more difficult to perform.

Hypophysectomy in Man: Effect on Water Excretion During the First Two Postoperative Months. D. Ikkos, R. Luft and H. Olivecrona. J. Clin. Endocrinol. **15**:553-567 (May) 1955 [Springfield, Ill.].

The changes in water excretion in the course of the first two months after hypophysectomy and the effect of cortisone on these changes were studied in 22 patients with metastatic cancer of the breast and in 2 patients with metastatic cancer of the prostate at the Serafimerlasarettet in Stockholm, Sweden. Hypophysectomy induced a polyuria interrupted by a short period with lower urine volumes (normal interphase) that occurred about the end of the first week. The persistence of this polyuria after the third postoperative week depended on cortisone administration. The mean specific gravity of the daily urine was below 1.010 during the administration of cortisone and was increased when cortisone was discontinued. The response to a water-load test was abnormal when cortisone was not given. A 24-hour thirst test did not induce an increase in the specific gravity of the urine, whether cortisone was given or not. The observations are interpreted as showing that the presence of the posterior lobe of the pituitary is not a prerequisite for the "normal interphase" in man; that one of the mediators of the diuretic action of the anterior lobe of the pituitary is corticotropin; and that antidiuretic hormone is probably present in hypophysectomized patients but is produced and/or released in an abnormal fashion.

Cancer of the Esophagus. C. B. Puestow, W. J. Gillesby and V. L. Guynn. A. M. A. Arch. Surg. **70**:662-671 (May) 1955 [Chicago].

In the past few years the incidence of carcinoma of the esophagus has represented about 0.1% of the total hospital admissions. Carcinoma of the esophagus represents about 3% of admissions for primary malignant disease. About 90% of carcinomas of the esophagus are squamous cell carcinomas, and about 10% are adenocarcinomas. Since most esophageal adenocarcinomas are found near the esophagogastric junction, many adenocarcinomas found at the lower end of the esophagus may be primary in the stomach extending into the esophagus. Five adenocarcinomas in the authors' series of 603 were definitely above the level of the cardia. The prognosis in adenocarcinoma of the esophagus is better than that of squamous cell carcinoma. Pulmonary complications are present in a high percentage of patients with esophageal obstruction owing to aspiration of saliva into the tracheobronchial tree. X-ray therapy has limited value and presents definite hazards. The authors prefer surgical intervention. The operative mortality is decreasing, and the survival after operation shows that it is worth the effort. The authors ligate the esophagus above and below the tumor in the early stages of resection, in order to prevent exfoliation and inclusion of carcinoma cells in the line of suture. Lymphatic extension of the disease is probably more extensive than has been realized, and surgical excision will have to be extended if better results are to be expected. The authors prefer the left-sided approach.

Hypotension and Hypothermia in Surgery of Thoracic Aorta. O. C. Julian, W. J. Grove, W. S. Dye and others. A. M. A. Arch. Surg. **70**:729-738 (May) 1955 [Chicago].

The authors combined the techniques of hypotension and hypothermia in nine patients undergoing coarctation resection requiring graft replacement and in two patients undergoing resection of the upper thoracic aorta for aneurysm. The aneurysms were situated immediately beneath the left subclavian branch of the aorta in each case, and, in one, arteriosclerotic changes in the left subclavian artery had resulted in its complete occlusion. No evidence of ischemic damage to organs developed in any of the 11 patients. None of the nine patients operated on for coarctation died, but one of the two patients having resection of a thoracic aneurysm died on the 12th postoperative day. Although the period of occlusion was 68 minutes, there was no evidence of spinal cord or visceral damage. This man had an uneventful course until the 12th day. He died from hemorrhage resulting from a coughing spell. In the nine patients in whom hypothermia was used in preparation for resection of coarctation, the defect was closed with a preserved homologous graft. No untoward effects were noted from the combined use of hypotension and hypothermia.

Arterial Embolectomy. W. S. Dye, J. Olwin, H. Javid and O. C. Julian. A. M. A. Arch. Surg. **70**:715-722 (May) 1955 [Chicago].

During the years 1947 to 1953 the authors performed 65 embolectomies on 57 patients. Thirty-eight embolectomies in 33 patients were successful, that is, pulses were restored. Twenty-seven embolectomies in 24 patients failed. Included in these 27 failures are 6 that were technically successful in so far as the removal of the embolus and immediate restoration of pulses were concerned but in which the patient died at periods of five days to five months after the operation. There were 20 deaths in all, 14 occurring in the immediate postoperative period and six within six months after operation. The failures were related more to the precarious cardiac status of the patient at the time of operation than to any other factor. The time interval from the onset of the embolus is important, as 34 of the successful cases were operated on within the first 12 hours. Emboli were removed from the aortic bifurcation in six patients but only three lived; the other three died postoperatively in heart failure. In the three successful cases the patients were operated on within 12 hours of the onset and the operation resulted in restoration of pulses distally. This series of cases represents a positive surgical approach to arterial embolism. Embolectomies were attempted in many patients whose general condition was poor. Proponents of conservative treatment emphasize the high mortality associated with operation, and point out that spontaneous recovery is observed in some patients with acute embolic obstruction. The authors favor surgical treatment, not only because most emboli may be removed under local anesthesia, and the additional shock of the operation is minimal, but also because it is often difficult to distinguish between embolism and thrombosis. In most patients seen as emergencies one does not have records of previous pulses, and age and mode of onset of symptoms may be misleading. As a result, the authors believe all patients should be explored if there is any doubt as to differentiation between thrombosis and embolus. An acute arterial obstruction unrelieved by the release of arterial spasm should be surgically explored, particularly when it can be done under local anesthesia with little risk to the patient. Embolism of the aortic bifurcation constitutes a separate problem because of the need of general or spinal anesthesia. Although this is particularly true in the critically ill cardiac patient, exploration should be undertaken if at all possible since preservation of limb or life is rare without it.

Simple Mastectomy for Carcinoma of the Breast—Reported Results. W. R. Deaton Jr. Surgery **37**:720-725 (May) 1955 [St. Louis].

Radical mastectomy is physiologically, psychologically, and cosmetically mutilating. Although it has a low mortality, it may leave the patient with a useless arm, and postoperative chest pain is not uncommon. Simple mastectomy and irradiation therapy would be a more desirable method of treating carcinoma of the breast if the results at least equaled those obtained with radical mastectomy. McWhirter of Edinburgh, Scotland, recently reported that simple mastectomy and roentgenotherapy had produced better results, in his hands, than had radical mastectomy. Deaton believes that if McWhirter's observation could be substantiated, the prevailing opinions on the treatment of breast cancer would have to be modified. In an effort to evaluate McWhirter's results, reports by other investigators on the treatment of breast carcinoma by simple mastectomy and irradiation were tabulated; the average five-year survival rate for 808 patients was 59.6%. The average five-year survival rate following radical mastectomy, as reported by several authors, for 2,955 patients was 54.5%. The difference (5.1%) in the two survival rates amounts to over twice the value of the standard error of the difference (2.2). Case selection may weight these statistics, but all patients treated by radical mastectomy were theoretically curable and many treated by simple mastectomy were not. Other factors, such as pathological type of cancer, grade of malignancy, duration of disease at time of treatment, and age of patient at time of treatment, may influence the results, but the reports cited do not give sufficient detail to permit adequate detailed comparative studies. McWhirter's explanation for the apparent success of simple mastectomy and irradiation is based on three factors. 1. If the disease is confined to the breast, simple mastectomy will provide a cure. 2. If the regional nodes are involved, surgery often fails to produce a cure. Since irradiation is acknowledged to be beneficial in recurrences and metastases, its use should likewise inactivate the tumor cells. 3. If the malignant cells have spread beyond the regional nodes, no method of therapy succeeds. Many believe that the nature of the cancer and not the type of treatment determines the outcome.

Experience with Extrapleural Pneumothorax: Late Follow-Up Results in 179 Patients. A. Pulin and G. Ballarin. Chir. torac. 8:63-78 (Feb.) 1955 (In Italian) [Rome, Italy].

A follow-up was made of 182 patients with pulmonary tuberculosis who were treated by extrapleural pneumothorax between 1947 and 1951. Two patients could not be traced and in one the follow-up was inadequate. Eighteen patients were dead, 12 of these having died within the first two postoperative years (early death). Death was due to infection of the pleural cavity in 3, cardiac and respiratory insufficiency in 3 in whom the pneumothorax was ineffective and the disease had remained active, and homolateral or contralateral development of lesions in 10 in whom the lung reexpanded before the lesion had healed. The results were unsatisfactory in 26 patients, in 7 of whom a contralateral lesion was present, and satisfactory in 135, in 72 of whom the lung had reexpanded completely. The greatest number of patients with reexpansion of the lung in whom the results were good was found among those in whom the lung had remained collapsed for two and a half to five years. The lung should remain collapsed at least 18 months to insure good results. In fact, although the results were good in 14 patients in whom the lung had reexpanded in a shorter time, they were unsatisfactory in 6, and 15 others had died. The outcome of an extrapleural pneumothorax depends on the topography and the nature of the lesion, the chance of recovery being greater when the coexisting parenchymal alterations are not marked and the cavity is located in the upper zones. Complications—hemorrhage and clot formation, infection of the pleural cavity, empyema, and others—are common, and they greatly influence the final outcome of the treatment. Complications had occurred in 90 of the authors' patients. The follow-up revealed satisfactory results in 57 of these and unsatisfactory results in 18 together with 12 early deaths and 3 late deaths. Of the 89 patients in whom complications did not occur, the results were satisfactory in 78 and unsatisfactory in 8 (there were three late deaths among these). The findings in these patients are not unlike those observed after thoracoplasty or pulmonary resection. The authors [illegible] good results in 75.4% of the patients, but they believe that with a more suitable selection of the patients for extrapleural pneumothorax good results could be obtained in 92%. Patients for whom this operation is especially indicated are those who have a lesion that is relatively small, recent, located in the upper zones, and with pericavitary tissue that is relatively healthy or infiltrated but without signs of parenchymal fibrosis, sclerosis, or atelectasis, and who have a low sedimentation rate without a history of exudative pleurisy or intrapleural pneumothorax.

Segmental Colitis: Results of Surgery. J. H. Manning, R. Warren and A. S. Adi. New England J. Med. **252**:850-853 (May 19) 1955 [Boston].

Segmental colitis, also referred to as regional colitis and [illegible] sided colitis, has been defined as a chronic, nonspecific or cryp genic inflammatory ulcerative or hyperplastic lesion, involvi long, short, or multiple segments of the colon. To further clar the distinction between segmental colitis and the more comm and discrete clinical entities of ulcerative colitis and regio enteritis, the authors require for the diagnosis of segmental c tis, an inflammatory disease involving primarily the colon b sparing, initially at least, the rectum. Thirty-four patients (males and 19 females) seen by the authors between 1935 a 1952 satisfied this criterion. Patients with secondary involveme of the ileum of a lesser extent than that of the colon were not e cluded, nor were those whose disease later spread to the rectu Involvement of the ileum was present in 25 patients. Each the 34 patients in this series was subjected to an anastomot operation with or without resection of the involved intestin The operation rendered 19 of the patients asymptomatic for a average period of 4.6 years, but roentgenologic or proctoscop examination revealed evidence of mild persistent or recurre disease in five of these asymptomatic patients. The 19 asymp matic patients included 15 of the 24 who had undergone rese tion and 4 of the 10 in whom the involved intestine had no been resected. The anastomotic operations failed in 15 patie 7 of whom were restored to health by ileostomy, so that 2 patients obtained a symptomatic cure. Of the remaining eig patients, five died and three were not relieved of their symptom Carcinoma of the colon developed in two of the patients. Seg mental colitis occupies a midposition clinically and pathologica between ulcerative colitis and regional ileitis. Surgical manag ment is necessary in most patients. An ileosigmoidostomy do not cause disability from diarrhea unless there is recurrence o the disease. Because it is not possible to predict in which patien sease will recur after an anastomotic operation, such an ion should be attempted in most patients before an ileos- is performed. Unless there is a definite contraindication on of the diseased intestine should be performed simul- isly with the anastomosis or at a later date.

of Cushing's Syndrome of Unknown Pathogenesis Treated ally by Unilateral Adrenalectomy: Results After Two G. M. Molinatti, A. Pizzini and R. Nejrotti. Minerva 46:650-656 (March 10) 1955 (In Italian) [Turin, Italy].

ase of adrenal cortical hyperfunction (Cushing's syndrome) rapid onset and development is reported in a 33-year-old r. When first seen he had clinical signs typical of the con- , and the laboratory tests revealed an extremely high uri- output of the 17-ketosteroids (116.4 mg.), while that of the oids was only slightly increased. Because the roentgeno- failed to reveal the presence of a suprarenal mass, it was lt to establish the origin of the condition. An exploratory tion confirmed the findings of the roentgenograms. Al- h both adrenals appeared normal in shape and volume, f them was removed. Histological studies revealed no struc- and cellular alterations, but there was a marked increase lipids in the three layers of the adrenal cortex. Immedi- after the adrenalectomy, the daily urinary excretion of -ketosteroids decreased rapidly and progressively (66 mg. ays later) whereas that of the corticoids increased. The t was followed for two years, during which time the excre- f the 17-ketosteroids remained slightly higher than normal, hat of the corticoids, aside from the brief postoperative se, did not change substantially, although it did show a tendency to increase. As for the clinical signs, the diabetes e obesity that were present when the patient was first seen t change; the cutaneous alterations and the hypertension moderately improved; the muscular strength and hemato- l findings returned to normal; and the impotence disap- d. Despite this improvement, however, a certain degree peractivity of the adrenal cortex was still evident at the of writing. The absence of neoplasms in both adrenals, the gs in the adrenal that was removed, and the difference en the preoperative and postoperative course of the con- suggest that the Cushing's syndrome was caused by a ry cortical adrenal hyperfunction without hyperplasia. This ndicates that it is impossible to diagnose a malignant neo- of the adrenal cortex on the basis of hormonal studies

lness of Mean Erythrocyte Volume in Surgical Interven- n the Thorax. W. Köle and K. Paul. Wien. med. Wchnschr. 1-393 (May 14) 1955 (In German) [Vienna, Austria].

20 healthy men and 20 healthy women the mean erythro- olume according to Moro's method was determined as e index by the relation of total erythrocyte volume to the er of erythrocytes per cubic centimeter of blood. The mean in men were 99μ, and in women 101μ, i. e., an index of e mean erythrocyte volume also was determined in patients pulmonary tuberculosis before they underwent surgical nent and after surgical treatment consisting of extrapleural nonolysis, apicolysis combined with thoracoplasty, lobec- and pneumonectomy. The mean erythrocyte volume of its with extrapleural pneumothorax was similar to that of y persons. In these patients the reduction of respiratory e was compensated for by polyglobulism with normal erythrocyte volume or by the healthy circulatory system, reduction of the respiratory surface was so slight that anisms of compensation were not manifest. The mean ocyte volume of patients with lobectomy was moderately gnificantly increased, and this increase was even more pro- ed in patients with pneumonectomy. An increase of mean ocyte volume before the surgical intervention suggests that demands have already been made by the circulation and ythropoietic system on the patient's capacity for compensa- values of mean erythrocyte volume exceeding 1.2 must be dered as definite contraindication for surgical intervention. minations of total erythrocyte volume and of mean erythrocyte volume are indispensable in the course of the clinical examination of patients with pulmonary tuberculosis before a decision concerning surgical intervention on the thorax is made.

Fractures of the Upper Extremity in Children. J. C. Ivins. Minnesota Med. 38:296-298 (May) 1955 [St. Paul].

A plea is made for conservatism in treating fractures in children. The heavy periosteum that surrounds the bone in children may help to prevent displacement. Most of the time it makes for satisfactory manipulation and easier closed reduction. Nature will do a wonderful job in healing these fractures and normal function will be restored, as a rule, if physicians will simply assist nature to the extent of restoring alignment and providing proper immobilization for an adequate length of time. Thus completely satisfactory results can be obtained by traction or by closed manipulation and immobilization in plaster. Certain epiphysial injuries at the elbow may require open reduction when the aponeurosis is completely torn and the condylar fragment is rotated completely out of the joint and turned upside down or when avulsion of the internal epicondyle is associated with complete outward displacement of the elbow and frequently with damage to the ulnar nerve. The head of the radius in children must never be excised; in case of marked displacement of the upper radial epiphysis a short incision may be necessary to restore the parts under direct vision, and a Kirschner wire can be introduced from the back of the elbow through the capitellum into the shaft of the radius to hold its position for two or three weeks until early formation of callus occurs.

NEUROLOGY & PSYCHIATRY

Risk of Paralytic and Nonparalytic Forms of Poliomyelitis to Household Contacts in Nonepidemic Years. M. Siegel, M. Greenberg and P. Stone Jr. New England J. Med. 252:752-756 (May 5) 1955 [Boston].

The primary objective of this study was to determine the probability of clinical infection among household members after the occurrence of poliomyelitis in a member. Data bearing on these problems have been collected in New York City since 1949. The results obtained in the 1949 epidemic were reported previously. The data obtained in the succeeding nonepidemic years, from 1950 to 1953, inclusive, are described in the present communication. Data were obtained from 3,028 household units in which one or more cases of poliomyelitis occurred during the four-year period of observation. Multiple cases were reported in 2.7% of these households. It was found that the probability that paralytic infection would develop in household members after the onset of a case in the family was greater when the initial case was paralytic than when it was nonparalytic. On the other hand, the risk of subsequent nonparalytic infection seemed to be greater when the initial case was nonparalytic. These differences were most striking among household members under 15 years of age. The attack rate among household members after the occurrence of the first case compared to that observed in the general population was greater in the nonepidemic years of 1950-1953 than in the epidemic of 1949.

Epinephrine-Mecholyl Test (Funkenstein Test): Its Value in Determining the Recovery Potential of Patients with Mental Disease. L. Alexander. A. M. A. Arch. Neurol. & Psychiat. 73:496-514 (May) 1955 [Chicago].

Funkenstein's prognostic test was administered to 201 consecutive patients prior to treatment. The results were correlated with the outcome of the therapy. The Funkenstein test consists in measuring the blood pressure changes and observing the immediate clinical and psychological response of the patient, first to an intravenous injection of 0.025 mg. of epinephrine, then to an intramuscular injection of 10 mg. of methacholine (Mecholyl) chloride. The epinephrine test allows division of the patients into two major groups—those with and those without epinephrine-precipitable anxiety. The Mecholyl test allows division of the patients into six fairly distinct groups based on their blood pressure response patterns. A seventh blood pressure reaction group is based on the epinephrine test and consists of those treatment for enuresis. Much can be accomplished by proper habit formation. Parents should realize that the basic responsibility for functional enuresis is theirs. The child's sense of security and self-confidence should be built up by loving reassurance and encouragement, rather than be destroyed by a neurotic, egocentric, emotional mother. The burden of guidance falls upon the family pediatrician or physician. He can achieve a lasting result through encouragement and a change of attitude in the child. The child should be made to void at a regular hour before bedtime. The hour of his bed-wetting should be determined, and then this act should be anticipated and the child awakened and placed on the toilet until he voids. Diet should be concerned only with the elimination of diuretics, like coffee, tea, or cocoa, and the use of nonconstipating foods. The limitation of fluids has no scientific basis. At this time the best generally available treatment in functional enuresis appears to be an apparatus that assists the formation of a normally conditioned bladder reflex. The device involves the use of a pad on which the child sleeps with knowledge and consent. If wetting occurs, a bell rings awakening the child and signaling him to go to the toilet. Later both a bell and a light were incorporated as a conditioning stimulus. The use of such an apparatus has effected cures in as high as 88% of cases.

UROLOGY

Bilateral Adrenalectomy in Carcinoma of Prostate. E. H. Ray. J. Urol. 73:712-715 (April) 1955 [Baltimore].

Ray performed bilateral adrenalectomy in six patients with advanced carcinoma of the prostate in reactivation following periods of remission after orchiectomy that ranged from 14 months to 62 months. The operation was done in one stage using a modified lateral kidney approach. There were no postoperative deaths in this group. Five patients had no evidence of osseous metastasis at the time of original diagnosis and orchiectomy with institution of estrogen therapy. The sixth had orchiectomy done elsewhere and was not seen by Ray until just prior to adrenalectomy 14 months later. In all five castration and estrogen therapy were followed by regressive change in the carcinoma, which was dramatic in one, good but not complete in two and only fair in two. At the time of adrenalectomy all of the six patients showed extensive metastasis (to bone in five and to lymphatics in one), with recurrence of bladder neck obstruction in one. All but one of the patients experienced relief from pain almost immediately after adrenalectomy, varying in degree from moderate to complete and lasting from only a few weeks in 1 to 14 months in another. Two showed no objective evidence of improvement following adrenalectomy. In four there was objective evidence of some regression. The author feels that elimination of adrenocortical function in patients whose prostatic carcinomas have become reactivated after a period of remission induced by castration and estrogen therapy will result in a second period of remission for some and marked relief from pain in most. This second period of remission with regression of the tumor will not occur as frequently as that which occurs primarily following orchiectomy nor does it seem likely to be as enduring.

Erythroplasia of Queyrat with Invasive Carcinoma and with Coincidental Carcinoma in Situ of Urethra. H. Wechsler, L. L. Spivack and A. L. Dean. J. Urol. 73:697-702 (April) 1955 [Baltimore].

Erythroplasia of Queyrat is a precancerous lesion of the penis, which is rare, and therefore often unrecognized. The case presented concerned a man, aged 59, who, when hospitalized in 1953, complained of an exquisitely tender glans penis. His lesion had first been noticed as a small, red spot over 30 years before. It did not bother him and seemed to be quiescent for about 20 years. In the next 10 years there had been a slow but steady growth. In 1947 when he had received effective x-ray therapy for squamous carcinoma of the mouth, a swelling in the right groin was also found and was diagnosed as granuloma inguinale, although Donovan bodies were not found. The Frei test for lymphogranuloma inguinale was negative. The patient was given tartar emetic, and the inguinal lesion healed in five months. He returned to the hospital in August, 1949, with symptoms sugges tive of coronary sclerosis. Physical examination of the genitali and inguinal region showed extensive scarring of the right groi and a deformity of the penis due to retraction of the prepuce A third admission occurred in March, 1952, because of pain t the glans penis. The glans was now markedly reddened a "raw." Palpation of the glans and coronal region caused muc pain. Since local treatment had no effect on the lesion or th pain, the patient was advised to undergo amputation of th penis. He thereupon left the hospital. In September, 1953, th patient entered the hospital because he could no longer tolera the pain. The lesion was bright red, irregularly circular, wi a sharp border and very tender to touch. A diagnosis of erythr plasia of Queyrat was made and the patient was again advise to have his penis amputated. He now consented. Microscopi studies on the surgical specimen led to the following diagnose erythroplasia of penis, superficially invading epidermoid carc noma of the glans near the meatus, carcinoma in situ of th urethra, and fibrosis of interstitial tissues of the penis. Nin months later the patient was still well. This case of erythr plasia of Queyrat shows the tendency to chronicity and t malignant change. Histological proof of cancer in the early lesio has never been shown, and it is likely that carcinoma started i the tissue that had been involved for many years. The findi of a separate carcinoma of the urethra is interesting, but multip cancers of the genitourinary tract have been described prev ously.

Aluminum Gel Dietary Prophylaxis After Extensive Nephroliti otomy. R. M. Spellman and V. F. Marshall. J. Urol. 73:660-6 (April) 1955 [Baltimore].

It has been suggested that the high incidence of recurren of calculi after extensive nephrolithotomy might be reduced the use of aluminum gels in conjunction with a diet low phosphate content (Shorr regimen). Further to evaluate t effectiveness of this regimen Spellman and Marshall reviewed t records of 18 patients with typical staghorn calculi in who extensive nephrolithotomy was performed at the New Yo Hospital between 1946 and 1953. In the immediate postoperati course the nephrostomy tubes were irrigated only to insure th patency. After the first week, gentle daily irrigations were us ally employed. The nephrostomy tube was removed about t 20th postoperative day. As soon as the patient was able to a general diet he was placed on the Shorr regimen. Fourte of the 18 patients were followed for growth or recurrence stone for periods varying from one to seven years postoperative In no instance did a new stone appear or a residual fragment gro while the patient was definitely following the program. In so instances defection from the prophylaxis promptly resulted a recurrence. The postoperative recurrence rate in other ser in which the regimen was not stressed has generally been hi The authors do not advocate complete nephrolithotomy in cases of staghorn renal disease. The observations from this a previous studies indicate that if such extensive surgery is ca ried out it should be followed by conscientious application the aluminum gel dietary program.

New Data on the Artificial Kidney. L. Bartrina. Presse mé 63:589-590 (April 23) 1955 (In French) [Paris, France].

Although hemodialysis with the artificial kidney has bee considered a dangerous procedure, to be used only when othe methods have failed, not a single mishap occurred in 200 patien treated by Bartrina, who believes that the artificial kidney shoul be used early in the course of the nephropathic emergency. Whe hemodialysis is performed in patients whose lesions are revers ible, the blood urea and xanthoprotein readings taken a fe hours after the completion of dialysis are lower than thos taken immediately afterward. This fact demonstrates that hemo dialysis has not only a mechanical but also a biological effec In irreversible cases (as verified by autopsy in many instance the blood urea increases after the completion of hemodialysis This phenomenon occurs presumably because, when renal fun tion no longer exists and the urea-laden blood suddenly is re placed by dialyzed blood, urea from the tissues enters the bloo in great quantities. Thus, early use of the artificial kidney, while some portion of kidney is still able to respond to the stimulus of dialysis, is of the utmost importance. Bartrina uses the technique of fractionated hemodialysis with a specially constructed apparatus allowing of bedside application. The patient has to undergo only one withdrawal and one transfusion of his own blood, which is never exposed to the air in the process. With the exercise of caution and proper sterilization, no destruction of red blood cells occurs, nor is there danger from pyrogens. Mild hyperpressure with an oxygen current oxygenates the blood and speeds the dialyzing process to one-fourth of what it was in the past. The artificial kidney should be used in all patients with acute reversible uremia, extrarenal uremia, postoperative intoxication, hepatic intoxication, shock, burns, sublimate intoxication, et cetera. The treatment is also indicated as maintenance or symptomatic therapy of hyperglycemia, blood electrolyte imbalance, rheumatism, uric hyperacidity, and chronic and progressive nephritis. In the latter category, dialyses repeated at intervals of from one to three months have proved satisfactory. Several patients have been maintained for more than a year at 0.5 to 5.7 gm. of urea per 1,000 cc., whereas they formerly had blood urea levels of 1 to 2 gm. per 100 cc. Cure cannot be obtained in these patients, but their lives can be prolonged. In uremia with reversible lesions and extrarenal uremia, the success of the artificial kidney cannot be denied.

THERAPEUTICS

Treatment of Mycotic Infections with Candida Albicans by a New Antifungal Antibiotic, Nystatine. E. Drouhet. Presse méd. 63:620-623 (April 27) 1955 (In French) [Paris, France].

The effect of a new antifungal antibiotic, nystatine, was tested in vitro on a number of strains of Candida and Geotrichum and in vivo on experimental infections in rabbits and on 35 persons with generalized or localized infections with C. albicans. In vitro, the drug was effective against all the strains, that is, 55 varieties of Candida and 5 of Geotrichum, inhibiting their growth to concentrations ranging between 1.56 and 12.5 mcg. per cubic centimeter. The drug's action was more potent in a liquid medium than in a gelose one, and it was fungicidal as well as fungistatic. The administration of nystatine to rabbits with intestinal infestation with C. albicans lessened the amount of the yeast in the intestine. The mortality among rabbits intravenously infected with C. albicans was 100%, but parenteral administration of 40 mg. of nystatine daily for five days reduced this rate to 62.5%. Massive doses (3 gm. per kilogram) of the drug introduced into the digestive tract of the animals produced no toxic effects. Nystatine was very effective both clinically and from the laboratory point of view in the 35 patients treated. Digestive and urinary disturbances cleared, and oral lesions disappeared. The organisms disappeared from, or were diminished in, the mouth, blood, stools, and urine four or five days after the administration of the antibiotic, the dosage varying between 0.2 and 1 gm. a day. Three patients had relapses about two weeks after cessation of treatment.

Urecholine in Myasthenia Gravis. H. Schwarz. Canad. M. A. J. 72:346-351 (March 1) 1955 [Toronto, Canada].

Choline esters, which resemble acetylcholine in action, have been tried in myasthenia gravis, and eventually bethanechol (Urecholine) chloride was found, which is singularly free of undesirable effects. The effects of this choline ester were evaluated on 10 patients with myasthenia gravis intermittently over a three-year period, and also in two control patients with bulbar palsy for one month. Bethanechol, when given in comparatively large doses (200 to 250 mg. daily), increased the muscle strength and significantly lessened the need for prostigmine in 9 of the 10 patients with myasthenia. Bethanechol plus less prostigmine produced a greater and more sustained increase in muscle strength than did larger doses of prostigmine given alone or prostigmine with ephedrine. Bethanechol, while in no way replacing prostigmine, appears to be a useful adjunct in the treatment of myasthenia gravis. Patients with this disease possess a remarkable tolerance for large doses of this drug. Since the completion of this report it has been found that cyanocobalamin (vitamin B_{12}), given intramuscularly in a daily dose of 1 mg., potentiates the action of bethanechol in myasthenia gravis.

Biological and Clinical Study of a Synthetic Heparin-like Substance: Dextran Sulfate. E. Donzelot, H. Kaufmann and G. Dauzier. Semaine hôp. Paris 31:1475-1480 (April 30) 1955 (In French) [Paris, France].

Dextran sulfate is a nontoxic, synthetic anticoagulant with a heparin-like action. Study of its in vivo effect on the circulation shows that it does not produce fibrinogen precipitation or platelet agglutination—the two effects by which the toxicity of other synthetic anticoagulants is most clearly demonstrated. Its anticoagulant action is sometimes superior to that of heparin, but the hypocoagulability it produces seldom leads to hemorrhagic complications. It is most effective when given intravenously, but it is also beneficial when given intramuscularly and this is often an advantage. It is well tolerated and easy to manage: the only tests needed are the Howell and Quick times and even these are not necessary unless the treatment is intensive. Some minor side-effects may be seen (e. g., allergic and vasomotor disturbances, mild diarrhea, and loss of hair in a few patients), but they are regressive and disappear either spontaneously or when treatment is suspended. The clinical effect of dextran sulfate was investigated in 60 patients with various venous, arterial, and exudative conditions and the results were found to be, on the whole, better than those obtained with heparin. Improvement occurred more rapidly and even patients resistant to treatment with heparin or a combination of heparin and dicoumarin derived substantial benefit from dextran sulfate. The venous conditions in which a favorable response was obtained included typical phlegmasia alba dolens, neoplastic phlebitis, periphlebitis, and various sequelae of phlebitis, especially postphlebitic edema. Excellent results were also obtained in arterial conditions, whatever their seat (coronaritis, chronic arteritis of the legs, certain cases of cerebral arteritis, or arterial emboli). The pain of peripheral arteritis, in particular, disappeared rapidly, and the local temperature of the affected limb increased. The only significant hemorrhage seen occurred in the one patient who showed no response to dextran sulfate; he had Buerger's disease and was in poor condition. The fact that the hemorrhage occurred although the coagulation tests were within normal limits shows that care must be used in treating patients in poor condition with dextran sulfate, no less than with heparin. The results obtained in various exudative conditions, notably postphlebitic edema, were similar to those obtained with heparin. Electrophoretic studies indicate that dextran sulfate has a more intense effect on lipids than heparin. Whether this property will prove to be beneficial in the treatment of patients with atherosclerosis remains to be seen.

On the Use of Dehydroisoandrosterone in Pilot Fatigue. G. Rotondo. Riv. med. aeronaut. 18:78-88 (Jan.-March) 1955 (In Italian) [Rome, Italy].

In many pilots, especially in some who were extremely fatigued, the author observed a syndrome characterized by asthenia, lack of appetite, dyspepsia, attacks of melancholia, apathy, hypotension, and sometimes poor general condition. Some of these manifestations are found in patients with hypoadrenia. The hypothesis that a defective or at least an altered function of the adrenal cortex was present in these persons seemed to be confirmed when an assay of the 17-ketosteroids in the urine gave subnormal values. On the basis of this finding, the author gave dehydroisoandrosterone to seven jet pilots, with from 500 to 1,100 hours of flight, in whom the above-mentioned signs were evident. In some of them aeroneurosis was present. The treatment consisted in the suspension of all flying activity, absolute rest, and prolonged administration of "Neutrostress." This preparation, which is obtained by combining 10 mg. of dehydroisoandrosterone with 5 mg. of methylandrostenediol, was given at first orally (two tablets daily), but when prompt results were not obtained the parenteral route was used. The therapy was continued for periods of 15 to 30 days alternating with treatment-free periods that varied in length according to the severity of the symptoms. A notable improvement in the subjective symptoms together with the restoration of energy and of capacity for concentration and mental work was observed after the first days of the therapy. The arterial pressure was increased slightly, some patients gained weight, and the general condition was improved. The urinary excretion of the 17-ketosteroids was increased from an average pretreatment value of 9.07 ± 1.04 to an average value of 14.37 ± 1.98 mg. These results indicate that the administration of dehydroisoandrosterone influenced the hypoadrenia, which was the main cause of the patients' illness. At the end of the treatment, all the patients except one, in whom dyspeptic disturbances were still present at the time of writing, resumed flying.

INDUSTRIAL MEDICINE

The Estimation of Health Hazards from Air Pollution. W. C. L. Hemeon. A. M. A. Arch. Indust. Health. **11**:397-402 (May) 1955 [Chicago].

In a consideration of aerosol sampling in research on atmospheric pollution and health, the principal problem is in obtaining samples of significant particle size undiluted by the omnipresent large particles of irrespirable sizes. Significant data on atmospheric concentrations apart from composition can be obtained by light scattering measurements either on filter paper or in atmospheric suspension. The available scientific data are not adequate to elucidate the question of chronic health hazards from air pollution. There is, however, no question concerning the effects of acute exposures to pollutants in the air. Fatalities and illnesses in acute smog episodes appear to be a result of simple irritation of the respiratory tract as distinct from systemic poisoning. There is much evidence to support the hypothesis that the irritant is particulate matter, whether liquid or solid, rather than gaseous. The author believes that only the water-soluble fraction in acute smog episodes contributes to the irritant effect. A study of the composition of this fraction obtained from two smog samples collected in the course of two of the most notorious episodes of acute air pollution in Donora, Pa., in October, 1948, and in London, England, in December, 1952, was carried out. Results showed that both these samples were rich in sulfates and chlorides of ammonia. It is suggested that acidic salts (in particular, metal ammonium sulfates) may be the primary substances responsible for respiratory irritation in smog episodes.

·n Spray Concentrations and Residues in Quebec Apple P. E. Braid, J. P. Windish and C. R. Ross. A. M. A. Indust. Health. **11**:408-412 (May) 1955 [Chicago].

Samples of spray mist were taken during spraying operations with parathion, and leaf and air samples were collected subsequently in three apple orchards. Sprays containing 3 to 4 lb. of 15% parathion wettable powder per 1,000 lb. of water were applied at the rate of 0.12 to 0.15 lb. of the 15% wettable powder per tree. Under low wind velocities (3 to 4 miles per hour) there was no significant concentration of parathion in the air within one hour, or more, after spraying. The authors' data indicate that with the spraying technique used in their studies, symptoms of severe parathion poisoning are not likely to occur, provided that elementary precautions are observed. Nevertheless, several cases of parathion poisoning have occurred in this area. In each case that could be investigated, it was found that some gross exposure to parathion occurred as a result of negligence. Typical of such exposures were direct skin exposure during nozzle cleaning, wearing of nonwaterproof clothing drenched with spray, or excessive skin contact with the concentrated parathion during tank filling. Thus it appears that many of the users of this insecticide have not yet been sufficiently impressed with the need for proper handling of an insecticide as toxic as parathion.

Medical and Economic Factors Relating to the Compensable Back Injury. A. S. Russek. Arch. Phys. Med. **36**:316-323 (May) 1955 [Chicago].

The compensable back injury is a special problem and differs from other industrial injuries in costs and time loss. Analyses of large groups of cases indicate that symptomatic treatment is inadequate, thereby causing many patients to present chronic problems. Early recognition of the functional diagnosis an treatment along specific, objective lines produces better results. Due appreciation of fatigue as a factor is essential understanding the patient with back pain. The term "fatigu does not refer to muscular exhaustion from overwork, but that state of muscular inadequacy associated with prolong tension without relaxation. This is apparently due to accumulated metabolites of persistent muscular contraction diminished tidal volume of blood in the tense muscles. Workin sitting, and sleeping positions are therefore extremely importa in the prevention of fatigue. There is no correct standard postu Every person should always assume the most comfortable po tion in every situation, regardless even of gross postural defect The treatment of patients with chronic back pain has five obje tives: (1) correction of posture, if possible (with corsets, brace or other mechanical devices, if necessary); (2) relief of pai tenderness, and trigger point tenderness in order to break reflex phenomena (physical therapy, local anesthesia, and/or be rest may be required); (3) release and relaxation of tense muscl (heat, massage, active and passive exercises, etc.); (4) provisio for occupational therapy under supervised conditions to p serve or develop work tolerance and work capacity as physic improvement permits; and (5) detailed instruction of the patie regarding postural habits and training for other work, if nece sary. Long-standing chronic cases present problems in rehabili tion and require intensive therapeutic teamwork.

RADIOLOGY

Cancer of the Larynx: Five-Year Results, with Emphasis Radiotherapy. C. C. Wang and A. R. O'Donnell. New Engla J. Med. **252**:743-747 (May 5) 1955 [Boston].

The authors report on 253 patients with cancer of the vo cords or the immediately adjacent structures. The group inclu patients who were registered in the tumor clinic or were s in the department of radiology at the Massachusetts Gen Hospital from 1931 to 1949 inclusive. This interval allows fo minimum follow-up period of five years. Cancer of the lar is a disease of men: 240, or 95% of the entire group were ma or a ratio of 19 men to 1 woman. Histologically all but patient had squamous-cell carcinoma. Primary radiation tr ment was given to 161, and surgery to 84 patients; 8 received treatment. The evaluation of the results was based on the st of the disease at the time of therapy. The Nielson and Strandt classification is outlined, and tables indicate the number of tients in each stage, and the results obtained with surgery radiation. Well-filtered 200-kv. x-rays with at least 0.5-m copper filter (half-value layer of 1 mm. of copper) are used satisfactory results. Two direct opposing portals with a size of 4 by 5 cm. for the vocal-cord lesions and 6 by 8 cm. more extensive disease are employed. Daily treatments are gi alternately to both sides of the neck. Estimated tissue dose 5,000 to 6,000 r are delivered to the cancer-bearing are the rate of 200 to 250 r a day, the entire course of ther covering four to six weeks. This amount of radiation sho produce a skin reaction in the form of a brisk, wet radio matitis, particularly at the anterior midline of the neck, si the two lateral portals of entry must be overlapped at this po During the course of treatments regular, frequent, indirect lar goscopic examinations are mandatory to follow the response the tumor and disclose possible laryngeal edema. The ede should be avoided, for it may narrow the glottic space and crease the radioresponsiveness of the tumor. The treatment early cancer of the vocal cords, stage 1 and 2, by either rad therapy or surgery is attended by a high percentage of succ The preservation of a useful voice should make radiotherapy treatment of choice. In advanced cancer of the larynx, stag with supraglottic extension, a trial of radiotherapy may carried out when careful observation is possible. If the dise is not controlled radical surgery is still available. In stage when remote metastases have developed, the results by rad therapy and surgery are equally poor. Even in this group, ho ever, if no cervical lymph nodes are involved, 1 in 4 patie may survive symptom free for five years after radiotherapy. T study confirmed that early cancer of the larynx is one of curable cancers.

QUERIES AND MINOR NOTES

AMINOPHYLLINE FOR MYOCARDIAL INFARCTION

To the Editor:—*It has been my routine practice to prescribe aminophylline for victims of myocardial infarction secondary to coronary thrombosis. It has been almost routine to keep these patients on a regimen of aminophylline the rest of their lives. In so doing I seem to sleep a little bit better at night hoping it may dilate their coronary vessels at least a little. I have doubted the wisdom of the prolonged use of aminophylline but would like to know what the latest trend of thought is on this subject.* *M.D., North Carolina.*

Answer.—The question of the value of aminophylline for the prevention of recurrent myocardial infarction due to coronary thrombosis is one that has never been subjected to carefully controlled critical appraisal, at least there are no completely satisfactory studies in this regard. Reports of animal and clinical studies have been equivocal in terms of dilatation of the coronary arteries. Gold, Kwit, and Otto (*J. A. M. A.* **108:**2173 [June 26] 1937) performed a double blindfold test on 100 patients to determine the effect of the xanthines on pain. Not one patient in this series could tell by his symptoms whether he was receiving aminophylline or sugar of milk. Therefore, it must be concluded that while aminophylline enjoys widespread use, the evidence is not critically validated in support of this treatment for coronary thrombosis or insufficiency.

SEROLOGIC TESTS

To the Editor:—*A woman, aged 29, who showed a negative Wassermann test in August 1954, married in September, 1954, and became pregnant. In January, 1955, three successive blood samples showed positive serologic tests (Kline, Mazzini, and Kolmer). Her husband's test is negative. No history of or signs of syphilis could be elicited, and no evidence of other disease capable of altering the complex could be determined. Ten daily injections of 1,000,000 units of penicillin were administered. Four days later the serology was still positive. How should the future course of this patient be managed?*

M.D., New Jersey.

Answer.—This may be a case of a false positive Wassermann, and it is suggested that the case be so recorded and treatment discontinued. The amount of penicillin the patient received is adequate, and, if the serology remains positive, it would be considered that the patient does not have an infection of syphilis. No further treatment should be carried out unless the patient develops clinical manifestations of the disease. The inquirer does not mention the intensity of the positive serologic tests. That may be of importance, and a weak positive test would increase the doubt of infection.

BREAST FEEDING AND POLIOMYELITIS

To the Editor:—*Is there evidence that breast feeding of infants alters the subsequent incidence of poliomyelitis?*

M.D., Pennsylvania.

Answer.—In earlier times it was a common belief that breast-fed infants were less susceptible to acute infectious diseases than those who were bottle fed. In recent years interest in the subject has been revived. Valquist and Hogstedt (*Pediatrics* **4:**401 [Oct.] 1949) state "most children receive with their mothers' milk, homologous antibodies of various types during the first few months of life." However no evidence seems to have been produced that would indicate mothers' milk may contain sufficient antibody to protect a newborn infant from poliomyelitis.

EXPERIMENTAL CORONARY ARTERY DISEASE

To the Editor:—*Some physicians say that research work done on dogs for coronary sclerotic disease is useless when these experiments are applied on human beings because dogs do not have arteriosclerosis. What is your opinion? What animals would you recommend to be used for experiments in the revascularization of the myocardium?* *M.D., New York.*

Answer.—A distinction should be made between inflow through the coronary arteries and arteriosclerosis of the coronary arteries. The arterial disease does not produce death from the disease itself. The dangerous aspects of coronary arterial sclerosis is due to reduction of blood flow through the sclerotic arteries. It is true that this reduction in blood flow cannot be produced satisfactorily by trying to reproduce the sclerotic process. However, the inflow through the arteries can be reduced by surgical methods. The method that has been used has been to carry out partial or complete ligation of one or more coronary arteries. This reduces inflow of blood and can be compared to reduction of inflow brought about by arteriosclerosis. There should be no conflict in acceptance of the experimental work on revascularization of the heart, provided this distinction is borne in mind. Vascular changes have been produced experimentally in chickens, rabbits, and dogs, but these methods are not readily applicable to the study of revascularization because the amount of narrowing of the arteries is unpredictable. The experimental work on revascularization must be controlled scientifically, and the experimenter must know how much occlusion he has produced and where the occlusion is located. Surgical methods accomplish these occlusions better than any other method.

SNAKE BITE

To the Editor:—*What is the technique of the so-called ethyl chloride treatment of snake bite?* *M.D., Louisiana.*

Answer.—A tourniquet is applied immediately and ethyl chloride is sprayed over the bitten area to the point of frost and is repeated until a bucket and ice are available. "The extremity is then immersed in ice water for from 12 to 18 hours depending on the size of the snake and severity of the bite." The tourniquet is removed after five minutes in ice water. This technique is based on the reduction of an enzymatic action by half for every 10 degrees (C) drop in temperature and is known as the "L-C" (ligature and cold) method, proposed by Herbert L. Stahnke, Ph.D. Against this treatment are the dangers of slough from unwitting freezing of the skin, vascular and tissue damage from prolonged immersion in ice water (trench foot and immersion extremity), encouragement of anaerobic growth in the wound, and formation of pseudothrombi from noncellular extravasation from the capillary bed during the warm-up period, with subsequent sloughing and tendon exposure. The tourniquet, multiple incision, and suction technique following the head of swelling is still the local treatment of choice in Crotalus envenomization. It is doubtful that ethyl chloride spray, without freezing the overlying tissue solid, would affect venom deposited at a depth of ½ in.

HOT TAR BURNS

To the Editor:—*What is the best solvent for removing tar from the skin? Frequent burns of this nature are encountered, and, other than ether, which is very unsatisfactory, I have found no good preparation for removing it.*

W. M. McBride, M.D., Alexandria, La.

Answer.—Burns as the result of hot tar can be easily cared for, usually by the use of sterile mineral oil. The application of the mineral oil makes it a simple procedure to remove the tar that is adherent to the skin. The practice is to apply the mineral oil and then to gently cleanse the entire area with soap and water and apply the usual compressive occlusion dressing.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

HORMONES FOR ELDERLY PATIENTS

To the Editor:—*The regular administration of testosterone and estrogen in people over 60 years of age is advocated by Masters and Ballew (Geriatrics* **10:**1 *[Jan.] 1955) who state that the drugs should be given in the ratio of 20 mg. of testosterone to 1 mg. of estrogen, regardless of sex (or regardless of former sex, according to the authors). The dose advised is not stated. Such medication is envisaged for the total elderly population in order to maintain both physical and mental well being. Do other endocrinologists have precise information about this? What is the exact dosage? Are these hormones taken regularly apt to be cancer producing?*

M.D., Georgia.

Answer.—There is no quantitative data on the dosage of testosterone and/or estrogen in the elderly patient. The average male (up to 50 years of age) utilizes about 50 to 75 mg. of testosterone propionate weekly. The menstruating female utilizes about 1 mg. of stilbestrol equivalent daily. From clinical experience, the oral combination of androgens and estrogens affords anabolic synergism in dosages smaller than if either hormone is used alone; such combinations neutralize each other's influence on genital tissues, thus preventing masculinizing or feminizing symptoms. Both androgens and estrogens normally occur in both sexes, but in different quantities, as ascertained indirectly by comparison of urinary estrogens, androgens, and 17-ketosteroid excretions. No single androgen-estrogen preparation is suitable for all patients. There is no evidence that either testosterone or estrogen will produce cancer; however, routine examinations should be made with particular reference to the genital tract and breasts in women and to the prostate gland in men prior to instituting androgen-estrogen therapy. If malignant disease exists, or is suspected, a combination of androgen-estrogen therapy is contraindicated.

ACCURATE CHLORIDE DETERMINATION

To the Editor:—*Please describe and evaluate the urinary test for estimation of degree of adherence to sodium deprivation regimen.* *Luther Newhall, M.D., Santa Cruz, Calif.*

Answer.—For accurate scientific purposes, sodium must be determined directly. This is a task for a trained chemist, generally using a flame photometer. Since analyses of electrolytes in blood are gaining increased importance, a growing number of hospitals are acquiring this apparatus. The question seems to refer chiefly to the practical need of checking dietary control by a busy physician. This problem may pertain to gross violations of diet or to small errors. Chloride estimations are then depended on for indirect calculation of sodium values. The crudest check, in office or at bedside, requires only one solution containing 1% silver nitrate and 2% nitric acid and another solution containing 0.5 gm. of pure sodium chloride per liter. Any protein in the urine is removed by acidification with acetic acid, boiling, and filtering. Small equal volumes of urine and sodium chloride solution are placed in similar tubes, and an equal number of drops of silver nitrate solution are added to each. The density of the resulting white cloud in the tubes is compared. Either the urine or the sodium chloride solution may be diluted until the precipitate in the two appears equal, and simple arithmetic then gives the approximate percentage in the urine. The majority of dietary errors are gross enough to be revealed by this simple test. For more accurate chloride determination, the Whitehorn modification of the original Volhard silver nitrate titration is described in laboratory manuals and is usable in an office or small laboratory. A simplified office or bedside quantitation was described by Bryant, Job, Phillips, and Blecha (*J. A. M. A.* **140:**670 [June 25] 1949). It calls for only two solutions, namely a 10% solution of potassium chromate and an 0.73% solution of silver nitrate. Both may be kept in dropper bottles, the latter in dark glass. With another dropper, 10 drops of urine are placed in a Kahn type of test tube. Add 1 drop of potassium chromate, and shake. The silver nitrate solution is added drop by drop, with shaking, to the end-point of a permanent light brown or brick red color. Each drop of silver nitrate used represents approximately 250 mg. of sodium chloride or 100 mg. of sodium per liter. Estimation of sodium by means of chloride rests on the assumption of excretion almost exclusively in the form of sodium chloride. Two main fallacies must be guarded against; first, the ingestion of sodium bicarbonate or other nonchloride sodium salts; second, the presence of other chloride or halogen salts, such as bromides, or particularly the potassium chloride, which is an important constituent of salt substitutes in the diet.

CLICKING IN EAR

To the Editor:—*A patient has had head noises, loss of hearing, and a rather bad postnasal drip since the age of 20. Ten years ago a fenestration of the semicircular canals was performed. The patient now experiences a clicking in the ear that was operated on, especially when he swallows. The clicking starts about 7:30 p. m. and is very bad at night, when the patient is lying down, and in the morning. There is little clicking during the day. During the times of the clicking, the patient experiences no pain. At night, when the clicking starts, the patient has developed a compulsion to swallow. What is the cause and treatment?* *M.D., New York.*

Answer.—Clicking sounds in the ear may originate from three possible sources. First, there may be an abnormal amount of sticky mucus in the eustachian tube and over the torus. When the levator and tensor veli palatine muscles are tensed, as in swallowing, this action may form a film that, on breaking, may produce a clicking sound. Second, a rhythmic tic of the above muscles may be present, producing a rhythmic sound. This can be identified easily by observing rhythmic contractions of the palate on the involved side. Third, clicking sounds in the ear have been observed to persist after bougienage of the eustachian tube. It has been thought that this may be secondary to an injury to the tensor tympani or its nerve supply. These types of ear noises usually are not amenable to treatment, although sedatives may be tried. Fifty milligrams of chlorpromazine hydrochloride given three times a day might be suggested. Postnasal drip probably would not have causal significance in association with this symptom.

DEATHS DUE TO RABIES

To the Editor:—*Please give information on the human death rate due to rabies, as in our group none of us have ever seen a death due to this cause.*

L. G. Hunter, M.D., Milan, Ind.

Answer.—The following tabulation shows the United States death rates from rabies, 1932 through 1952.

Yr.	No. of Fatalities	Yr.	No. of Fatalities	Yr.	No. of Fatalities
1932........	55	1939........	40	1946........	34
1933........	65	1940........	41	1947........	26
1934........	80	1941........	39	1948........	24
1935........	77	1942........	36	1949........	10
1936........	73	1943........	47	1950........	18
1937........	59	1944........	56	1951........	18
1938........	66	1945........	43	1952........	24

DISEASES EXHIBITING SEASONAL INFLUENCE

To the Editor:—*Would you furnish an extensive list of diseases with a seasonal incidence.*

Joseph E. Moylan, M.D., Scranton, Pa.

Answer.—To list all diseases exhibiting a seasonal influence would mean setting down most of those carried in the "International List of Causes of Death." Perhaps it would be more appropriate to point out certain broad categories of disease in which the seasonal influence is strong. These are infectious and allergic diseases of the skin and respiratory and digestive systems, contagious diseases of childhood, metabolic diseases, and arteriosclerotic and coronary heart failure. The one broad disease category not yet shown to be influenced by season is that covering all classes of malignant disease, but even here there is a strong climatic or latitude influence.

EXACERBATION OF OLD TUBERCULOSIS

To the Editor:—*A white woman, aged 71, had in April, 1954, an acute flare-up of a pulmonary tuberculosis, which had been quiescent for 20 years. It started with an acute illness, with high fever, cough, and extreme prostration. The condition cleared up within a week under treatment with aureomycin. However, a lasting weakness and some cough remained. Sputum was positive for tuberculosis, and x-ray examination revealed right apex contracted with dense fibrosis at first and second anterior interspaces and irregular highlights (cavitation?). The density reaches from the apex down to the upper hilum. The superior mediastinum is shifted to the right, with distortion of the lower trachea and the main bronchus. The left apex also shows fibrotic changes. The left dome of the diaphragm is elevated, flattened upwards with thickened basal pleura. X-ray diagnosis shows moderately advanced, bilateral pulmonary tuberculosis. Strict rest in bed was ordered, and biweekly treatment with doses of 2 cc. of streptomycin intramuscularly with three oral doses of 125 mg. of nydrazid daily were given. The cough was very mild, temperature was normal within two weeks, and the sputum and the inoculated cultures of it became after six weeks consistently negative for tuberculosis and remained so until today. This treatment had been continued without interruption for nine months, and the patient has gained weight. She only feels a little weak on her feet but moves around in her rooms. How long should streptomycin-nydrazid treatment be continued?*

M.D., New Jersey.

Answer.—The description of the findings is quite clear, and there is little doubt about the diagnosis of the exacerbation of the old tuberculosis as well as the acute onset that was probably due more to a bacterial process rather than to a virus since aureomycin was so effective. At least the predominant factor causing symptoms was probably one of the virulent cocci. This type of tuberculosis is one that usually responds poorly to antimicrobial therapy. The vegetating acid fast bacilli were soon eliminated by the treatment, but there were probably many tubercle bacilli that were in a state of "hibernation" in the old fibroid lesions, during which time the bacilli seem to be little affected by the drugs. When the condition of the patient becomes worse, many of these "sleepers" start to grow and the disease becomes reactivated. That is a theoretical reason for a long continued course of treatment for nine months or a year more. At the end of that time, a reevaluation of the case may be advisable to see if still more therapy is indicated. The treatment followed has been proper. At this time it would be well to use 1 gm. twice a week of dihydrostreptomycin instead of streptomycin to avoid the possibility of damage to the labyrinth. Also it would be well to begin a plan of graduated exercise. Antimicrobial treatment has permitted some shortening of the rest periods over the old-time rest regimens but not too much. There should never be any symptoms produced by the exercise schedule, and the patient should not be allowed to think he, or she, is as well as he may feel. The feeling of well being is sometimes out of all proportion to the true condition.

ALOPECIA AREATA

To the Editor:—*Can you explain the sudden appearance of two bald spots in the scalp of a normal and unusually vigorous 5-year-old girl, who has had no antecedent scalp or constitutional disease? The rapidly developing bald plaques show an entire absence of hair, and they are sharply defined, whitish in color (with a smooth consistence), circular in shape, and of the size of 25-cent and 50-cent coins.*

M.D., California.

Answer.—The youngster apparently has alopecia areata, a condition that is but little understood. Emotional factors in some indirect manner are thought to play a causative role, but the connection has not been proved. The treatment is one of stimulation to the scalp, either by hand massage, electric apparatus, ultraviolet rays, or application of a stimulating ointment. The condition sometimes corrects itself without treatment.

GIVING FOOD DURING A TRANSFUSION

To the Editor:—*There has been a controversy in a local hospital about allowing patients to receive food while receiving blood by transfusion. Is there any reason why this may be harmful? In some instances blood is given slowly, and two or three hours may elapse during which patients requiring nourishment would be deprived of it. I am aware of passive transfer of sensitization, as in the case reported by Ramirez some years ago. It seems that conditions existing in the donor are to be guarded against, and this is usually done in the collection of blood for blood banks. I have found nothing in works on blood groups and transfusion concerning not allowing patients to receive food during routine transfusions, but, as there has been some criticism of the practice, I would like to have the matter clarified.* *M.D., Illinois.*

Answer.—In most cases the recipient of a transfusion receives blood as a necessary restorative measure during a period of one to three hours, and the necessity of feeding during this time is not even considered. Actually the patient's system is not being starved, since plasma containing glucose, salts, and nutriment is being received intravenously. Where the transfusion is given as an elective procedure rather than as a measure of urgency and more than two or three hours may elapse, if the patient complains of hunger it seems advisable to give a light meal of easily digested foods such as milk and crackers or a sweet drink merely to appease the appetite during the period of transfusion. The question raised of allergy passively acquired from the donor and precipitated by taking the allergen in food while the transfusion is being given is theoretically valid. Questioning the donor about his allergic reaction and not taking blood from a highly allergic donor is good blood bank practice. One other point should be borne in mind. If the blood is injected rapidly, particularly in a sick, very anemic patient and one with possibly partially decompensated cardiac disease, the patient should not be given large amounts of salt solution intravenously nor heavily salted food by mouth lest the intake of a considerable amount of sodium at such time produce pulmonary edema. This is a hazard of transfusion too often ignored or not recognized. In general the administration of food during a transfusion is not practiced and should be avoided except as suggested above.

CHLORINATED HYDROCARBON INSECTICIDES

To the Editor:—*Do any of the chlorinated hydrocarbon insecticides increase the activity of phosphatase enzymes? Do they cause an imbalance in the hormone production of the eosinophils and basophils of the pituitary, thereby causing anatomic and physiological changes throughout the body? Through their influence on the hypothalamus will they produce or aggravate conditions that are benefited by Rauwolfia drugs? Will they imbalance the enzyme activity in the steps of "Kreb's cycle" and produce or aggravate such clinical conditions as poliomyelitis, cancer, and kwashiorkor?*

George C. Furr, M.D., Clarksdale, Miss.

Answer.—Whether one considers a single large dose or repeated small doses, even the most casual observation indicates that the chief action of chlorinated hydrocarbon insecticides is on the neuromuscular system. The most careful study has shown that these compounds alter the function of every part of that system that has been suitably studied—cerebrum, cerebellum, cord, sensory nerves, motor nerves, autonomic system, and muscles. The basis of this action is unknown, but studies in several laboratories have apparently ruled out the possibility that it depends on an alteration of cholinesterase activity, oxygen consumption, or a variety of other reactions of nervous tissue. Our state of knowledge concerning these insecticides is, therefore, very similar to the state of our knowledge of many drugs that act on the nervous system. Minor inhibition of some enzymes of various tissues, activation of other enzymes, and no effect on most enzymes has been reported. In no instance has the magnitude of the effect been sufficient to explain the action of the compounds or to cause any significant physiological effect. It should be remembered that tissue enzymes usually have to be depressed to a small fraction of their normal activity before any change is produced in the function of the intact body.

No effect of chlorophenothane (DDT) on the hormones of mammals has been demonstrated, but large doses of chlorophenothane do act, through an unknown mechanism, to retard testicular development in cockerels. There is good reason to continue the search for the mechanism by which effective doses of chlorinated hydrocarbon insecticides produce their observable actions; this tedious, time-consuming work is going forward. In the meantime, a different sort of study has been carried on with chlorophenothane that should do much to allay fears and idle speculation. It has been shown that human beings who have voluntarily taken daily, for nearly a year, about 200 times the amount of chlorophenothane that appears in the average diet suffered no ill-effects that they could detect or that were revealed by careful physical examination and laboratory tests. These men absorbed more chlorophenothane than pest control operators or farmers who use the compound. The other chlorinated hydrocarbon insecticides are produced and used in smaller tonnage; they will be investigated as opportunity permits. As to the relation of chlorinated hydrocarbon insecticides to poliomyelitis, cancer, and a wide range of other diseases, Fowler (*Agric. Food Chem.* 1:469, 1953), who studied agricultural workers who used insecticides, said, "No evidence could be found that pesticides were the direct or indirect cause of any chronic disease, nor a contributing cause in diseases generally recognized as having other etiologies."

ABSINTHE

To the Editor:—*I recently learned there is an alcoholic beverage called Absinthe banned for sale or consumption in this country, presumably because it produces a nervous disorder by prolonged use. What is it composed of, and what is the pathogenesis of the disease it produces?*

Edward F. Blasser, M.D., Miami Beach, Fla.

Answer.—Absinthe differs from other alcoholic beverages in that it contains an extract of wormwood. Extract of wormwood in rabbits caused dyspnea, hematuria, gastroenteritis, and death. The volatile oil is an active narcotic poison causing trembling, stupor, and later violent epileptiform convulsions with involuntary evacuation, unconsciousness, and stertorous breathing that may end in death. One-half ounce of the volatile oil consumed by a male adult caused insensibility and convulsions with foaming at the mouth, although he recovered under the use of emetics with stimulants and emulsives. The effects of Absinthe differ from those of ordinary alcohol in that the characteristic symptoms of the former are restlessness at night, disturbing dreams, nausea and vomiting in the morning, trembling of hands and tongue, vertigo, and tendency to epileptiform convulsions.

TOOTHPASTE

To the Editor:—*What is the value, if any, of the "magic ingredients" now being added to practically all brands of toothpaste?* *C. Jay Hoyt, M.D., San Francisco.*

Answer.—The principal value of these ingredients may be in sales appeal. At this date the Council on Dental Therapeutics is not aware of adequate evidence that these ingredients are of substantial value in dental caries prophylaxis. Brushing the teeth with a suitable brush and dentifrice immediately after eating reduces residual carbohydrate, which is an important factor in tooth decay. Further benefit from a specific ingredient is doubtful in presently available products.

INFANT'S TOLERANCE FOR MILK

To the Editor:—*In the allergic infant with eczema, how long a period of abstinence from milk is required to establish tolerance for this food?* *M.D., Massachusetts.*

Answer.—The majority of such infants develop a tolerance even without eliminating the food. Abstinence from it probably results in more rapid and more certain tolerance. The time required varies not only with the degree of sensitivity but with other unknown factors. In the average case it could take several months.

COLORED MOVING PICTURES

To the Editor:—*Several patients, while wearing proper
scription glasses, have noted blurring of vision when view
colored movies on the new wide-angle screens. The pic
looks clear when they remove their glasses. Blurring does
occur when viewing black and white movies. What is the c
of this phenomenon?*

M.D., Ohi

Answer.—There is no adequate explanation for the
nomenon described on a basis of refraction. Certainly, the di
ence in refraction of the red and green components of the
ture cannot explain the blurring, when as stated the scre
seen clearly in black and white. These individuals probably
strongly with accommodation under these circumstances
probably produce a pseudomyopia, thus explaining the bl
vision. This complaint must be extremely rare since so
people observe moving pictures in color and in black and
and the complaint described has not appeared in the litera

MONOMER GASES

To the Editor:—*I must call your attention to a misinterp
tion of my publication that appeared in* The Journal (1
*[May 7] 1955), under the heading Monomer Gases. A
bottom of the second column I was quoted as reporting
4,000 ppm of chlorotrifluoroethylene killed 50% of a
of animals when inhaled four hours daily for 14
Actually the article* (J. Indust. Hyg. & Toxicol. **31:***343 [
1949) refers to single four-hour inhalations of a wide v
of vapors followed by 14 days of observation without fu
vapor inhalation. Therefore, the 1949 article referred
single four-hour inhalation, not to the 14-day repeate
halation given by your correspondent. The work done in
was on a pilot plant product. Work in 1954 on chlorotrifl
ethylene made on a commercial scale showed a greater d
of toxicity. Within 14 days of one four-hour inhalatio
rats died from 1,480 ppm; none died from 710 ppm,
severe kidney pathology was found; and none died from
ppm, and there was no kidney pathology.*

*Henry F. Smyth Jr.
Mellon Institute of Industrial Resea
University of Pittsburgh
Pittsburgh 13.*

HIGH SCHOOL ATHLETICS AND RHEUMATIC FE

To the Editor:—*I disagree with the answer given in the Q
and Minor Note Section in* The Journal (**157:***874 [Marc
1955) concerning a 16-year-old postrheumatic patient. T
knowledge there is no real evidence that minimal rheu
myocarditis, such as might escape a thorough cardiolo
evaluation, is in any way harmed by exertion. There is
evidence of damage to social and emotional adjustme
exclusion from athletics, which in a small school is a no
group activity and an important way of establishing w
Against athletics there is a vague presumption of dama
a condition assumed without evidence to be present. For
we have very real social and emotional benefits. It seem
me this boy should be permitted to play.*

*John E. Eichenlaub, M.D.
University of Minnesota Medical Scho
Minneapolis 14.*

QUINIDINE FOR MUSCULAR CRAMPS

To the Editor:—*The question of nocturnal cramps in the
appears repeatedly in* The Journal (**156:***1635 [Dec. 25] 1
For years I have treated nocturnal cramps, also those f
in pregnancy, with repeated doses of 100 to 200 mg
Benerva (aneurin) orally or preferably intravenously and
it was successful as long as these cramps are not of art
origin. In this case leg-down position can already prevent
nocturnal insufficiency. I would be interested to know if ot
have had similar results.*

*C. Braendli-Wyss, M.
Lyssachstrasse 15,
Burgdorf, Switzerland*

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CONSIDERATIONS IN THE PREPARATION AND USE OF POLIOMYELITIS VIRUS VACCINE

Jonas E. Salk, M.D., Pittsburgh

In assessing the state of knowledge of any subject a particular point in time, it is as important to define at is not known as it is to appreciate what is known. is for this reason that I would like to discuss some the problems still before us, with respect to vaccinan against poliomyelitis, as well as to review knowledge ned in the course of recent work. "Can durable imnity be induced by a noninfectious poliomyelitis vace?" is one of the principal questions still to be anered. Since the ultimate answer to this question cant be obtained until time has passed, we must content rselves only with an examination of facts now known, m which we can make some tentative interpretations m the trends observed.

The hypothesis that the presence of neutralizing antidy in the circulating blood is an effective barrier in lucing the likelihood of paralysis by the poliomyelitis us is now well supported by the great volume of inect, as well as direct, evidence from studies in exrimental animals and in man, on passive and active munization.[1] In this discussion, therefore, I will exine the evidence that exists concerning the creation of tibody and also the persistence of antibody induced tificially by vaccination.[2] Observations in some, of any more, individuals who were vaccinated one and half years earlier, and others vaccinated two and a half ars earlier, will be shown. I will try to orient my rearks along practical lines but will do so principally by ference to the theoretical and experimental considerations upon which are based the preparation and use of poliomyelitis vaccine.

To begin a discussion such as this, from the practical viewpoint, it would be well to consider first the special attributes required of a poliomyelitis vaccine, as compared to vaccine for any other diseases, since a vaccine for poliomyelitis requires particular attention as regards both safety and effectiveness. We know only too well the uniqueness of paralytic poliomyelitis, among all of the *infectious diseases*; the unusual combination that exists here is the terror and tragedy inflicted to a degree that is out of all proportion to the frequency of attack. The relative infrequency of severe paralysis under natural circumstances requires, above all else, that the vaccine must be free, insofar as it is possible to create such a preparation, of the capacity to induce the disease that it is intended to prevent; nor should a vaccine for poliomyelitis cause such side-effects as would make its use undesirable. If either the direct effects associated with its use, or incidental side-effects to any constituent, are of such nature as to make one prefer the chance of escaping the paralytic disease, one would not have a practically useful immunizing agent.

PRINCIPLES OF VACCINE PREPARATION AND SAFETY TESTING

First, I would like to describe the principles upon which the preparation of poliomyelitis vaccine is based and, particularly, the considerations involved in testing

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From the Virus Research Laboratory, School of Medicine, University of Pittsburgh.

Read in the Panel Discussion on Prospects for the Control of Poliomyelitis before the Joint Meeting of the Section on Pediatrics and the Section Preventive and Industrial Medicine and Public Health at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 7, 1955.

Many of the experimental and theoretical considerations discussed in this paper are being elaborated in more detail for publication elsewhere.

This study was aided by a grant from the National Foundation for Infantile Paralysis.

[1] Morgan, I. M.: Level of Serum Antibody Associated with Intracerebral Immunity in Monkeys Vaccinated with Lansing Poliomyelitis Virus, J. munol. **62**: 301, 1949. Bodian, D.: Sites of Immune Barriers in Poliomyelitis, *in Hartman*, F. W.; Horsfall, F. L., Jr., and Kidd, J. G.: The namics of Virus and *Rickettsial* Infections, New York, Blakiston Company, 1954; Experimental Studies on Passive Immunization Against Polioelitis: I. Protection with Human Gamma Globulin Against Intramuscular Inoculation, and Combined Passive and Active Immunization, Am. J. Hyg. : 132, 1951. Hammon, W. McD.; Coriell, L. L., and Wehrle, P. F.: Evaluation of Red Cross Gamma Globulin as a Prophylactic Agent for Polioelitis: 4. Final Report of Results Based on Clinical Diagnosis, J. A. M.A. **151**: 1272 (April 11) 1953. Howe, H. A.: Studies of Active Immunonesis in Poliomyelitis: I. Persistence and Recall by Homotypic or Heterotypic Superinfection of Neutralizing Antibody Originally Induced in Chimnzees by Vaccination or Infection, Am. J. Hyg. **60**: 371, 1954; II. Lack of Immunity in Chimpanzees Receiving Formol-Inactivated Vaccines of arginal Antigenic Potency, ibid. **60**: 392, 1954. Koprowski, H.: *Practical Application of Living Virus Vaccines*, in Hartman, F. W.; Horsfall, F. L., ., and Kidd, J. G.: The Dynamics of Virus and Rickettsial Infections, New York, Blakiston Company, 1954.

[2] Salk, J. E., and others: Studies in Human Subjects on Active Immunization Against Poliomyelitis: I. A Preliminary Report of Experiments in ogress, J. A. M. A. **151**: 1081 (March 28) 1953. Salk, J. E.: Recent Studies on Immunization Against Poliomyelitis, Pediatrics **12**: 471, 1953. Salk, E., and others: Studies in Human Subjects on Active Immunization Against Poliomyelitis: II. A Practical Means for Inducing and Maintaining Antidy Formation, Am. J. Pub. Health **44**: 994, 1954. Salk, J. E.: Present Status of the Problem of Vaccination Against Poliomyelitis, ibid. **45**: 285, 1955.

for safety. The objective in the preparation of a poliomyelitis vaccine cannot include the knowing or willful acceptance of a risk that is tangible, or measurable to any degree. Any risk that is involved, so long as it is recognized, must be corrected, whatever may be its cause; in the preparation of experimental vaccines in our own laboratory, and on a larger scale for field trial, it was the factor of safety, above all else, that imposed the limitations in the rapidity with which our studies were progressively advanced. To permit the practical application in the field to come close upon the heels of the rapid advances that were being made by investigations in the applied aspects of the problem, rather extensive transformation and expansion of the various facilities necessary for the availability of vaccine was required.

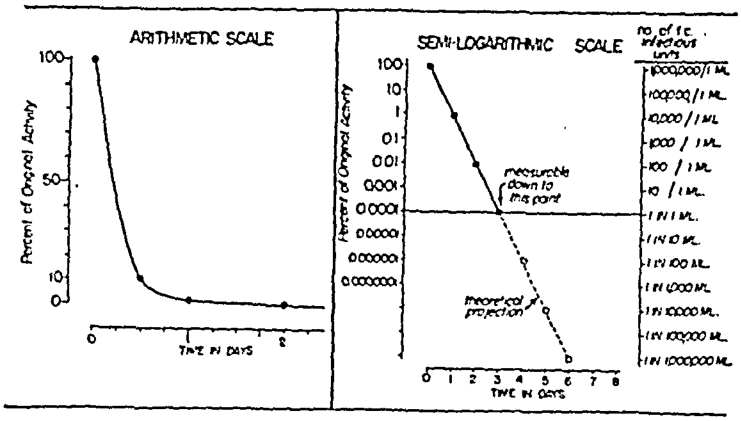

Fig. 1.—Rate of destruction of poliomyelitis virus infectivity at 37 C in presence of 1:4,000 formaldehyde solution (Formalin) at pH 7.

Although there were no indications either from our own studies in some 15,000 children, or from the much larger experience in the field tests of 1954, that the vaccine preparations employed contained infectious virus, it is understood now generally that certain lots of vaccine used in April, 1955, were associated with the subsequent development of paralytic poliomyelitis. This demanded a very intensive reexamination of the theoretical and practical implications of vaccine preparation, testing, and use.

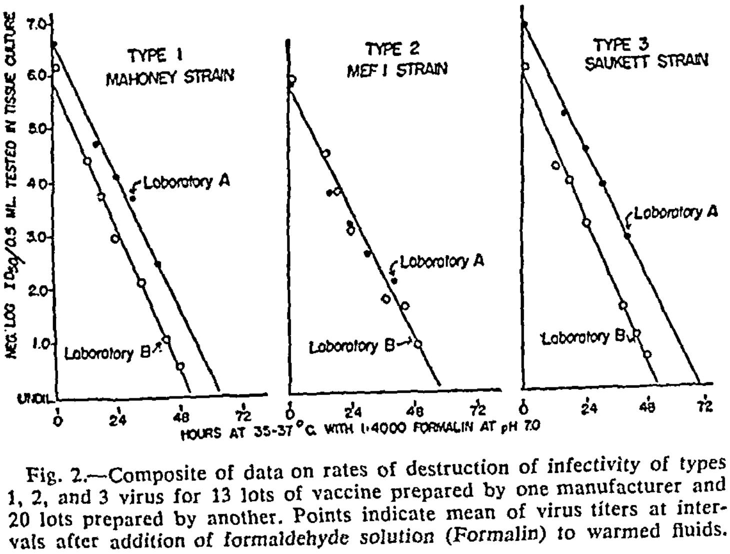

Fig. 2.—Composite of data on rates of destruction of infectivity of types 1, 2, and 3 virus for 13 lots of vaccine prepared by one manufacturer and 20 lots prepared by another. Points indicate mean of virus titers at intervals after addition of formaldehyde solution (Formalin) to warmed fluids.

I might say at this point that my own evaluation of the recent reexamination of the manufacturing and testing processes suggested a need for adjusting the techniques employed for large-scale operations so as to approximate that which it was possible to accomplish on an experimental basis; the objective is to yield the consistently satisfactory preparations that it has been possible to achieve, not only in the laboratory but even on a large scale. The theoretical considerations that applied originally are still sound and applicable—what is required is closer approximation in practice. I would like to discuss the theoretical considerations first and then to show how the practical problems have been, and are being, met.

It has been realized always that the preparation of a safe poliomyelitis vaccine would, at the beginning at least, require adherence to detail such as is not demanded for the preparation of any other immunizing agent. It was recognized, too, that there must be incorporated into the vaccine preparation process itself a test for safety, which we refer to as "the margin of safety," of such degree that the most sensitive tests upon a sample of each successive batch would be negative for living virus unless something unexpected had occurred, unknowingly, in the process of manufacture, or in subsequent handling, or in testing; it would follow that such would not be expected to occur but rarely. To help in knowing where the difficulty might have occurred in any given instance, tests are needed at various steps in processing, including the final stages. A series of observations, both in our laboratory and in the laboratories of manufacturers of biologicals, indicated that the desirable objective of consistency in reproducibility of vaccine preparation with an adequate margin of safety could be achieved.

Experience of Two Laboratories in Preparation of Vaccine for Field Trial on Production Scale

Sequence	Laboratory A *	Laboratory B
1	—	—
2	+	+
3	+	+
4	+	—
5	+	+
6	+	+
7	+	+
8	+	+
9	+	+
10	+	+
11	+	+
12	+	+
13	+	+
14	..	+
15	..	+
16	..	+
17	..	+
18	..	+
19	..	+
20	..	+

* Symbols indicate whether finished vaccine met all criteria for safety. — = no, + = yes.

In the early phases of our investigations it was necessary, in exploratory experiments, to determine the nature of the reaction between formaldehyde and poliomyelitis virus,[3] using various concentrations of formaldehyde, different temperatures, and different degrees of acidity. The conditions selected for preparation of field test vaccine were those that would lend themselves most readily to large-scale adaptation in a way that would provide the desired margin of safety not only with respect to th

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3. Salk, J. E., and others: Formaldehyde Treatment and Safety Testing of Experimental Poliomyelitis Vaccines, Am. J. Pub. Health 44:563, 1954.

estruction of virus infectivity but also with respect to e retention of antigenicity. Such studies furnished the rinciples upon which a carefully controlled inactivation rocess could be developed for use in the laboratories of ny producer of biological products that could acquire e staff and facilities for making poliomyelitis vaccine.

I can best illustrate what I mean using the accompany- g figures, which show the generally expected behavior, ased upon experience with experimentally produced accine. The left-hand portion of figure 1 shows that vithin the first 12 hours after the beginning of chemical reatment, 90% of virus infectivity is destroyed; within he subsequent 12 hour period, 90% of the infectivity hat still remains is destroyed—or, about 99% of virus nfectivity is eliminated within the first 24 hour period; n 48 hours, approximately 99.9% of the original infec- ious activity is obliterated. To eliminate the last traces f infectivity to a point below which none can be detected equires continuation of treatment for a number of days onger. From the practical viewpoint, the question that iad to be answered was, "At what point may it be pre- umed that virus infectivity is destroyed, either totally r, at least, to a degree beyond which it can no longer be neasured and, therefore, can be presumed not to be harmful to man?" The right-hand portion of figure 1 illustrates further the data depicted on the left, but in another way—that is to say—on a semilogarithmic scale, which allows a more precise examination of the portion of the left-hand curve that is in the range below 1% of remaining infectivity. Here it may be seen that in the course of three days the infectivity for tissue culture of material being converted into vaccine has been so altered that, whereas originally it contained one million tissue culture infectious units per milliliter, at the end of the first three-day period, there remained but one tissue culture infecting unit per milliliter. If treatment is continued for not less than an additional six days, it is expected that with thorough mixing of virus and formaldehyde, the maintenance of uniform temperature, a reasonably homogeneous population and adequate dispersion, the material treated for a total of nine days or longer should, theoretically, be free of any demonstrable virus—even if all of the fluid being converted into vaccine were tested in tissue culture or even in man. Such experiments were done under the conditions that apply not only in our laboratory but on a large scale in other laboratories in this country and abroad (fig. 2 and table).

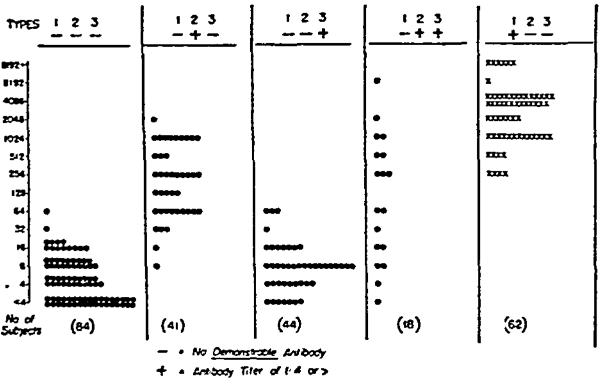

Fig. 3.—Type 1 antibody response to first dose of vaccine in persons with different prevaccination antibody patterns (vaccine lot 309). Different prevaccination antibody patterns are indicated at the top of each column.

The critical factors that influence the slope of the line in the right-hand portion of figure 1 are (1) temperature, (2) formaldehyde concentration, and (3) pH. Since the amount of free formaldehyde will be influenced by such constituents as the protein content, or the concentration of free amino acids, then constancy of composition of the fluid being converted into vaccine is a factor that would affect the rate of reaction. In spite of our ability to control these variables within practicable limits, it is still necessary to ascertain, by suitable tests, that all of the considerations have, in fact, been properly effected. There is one critically important factor that demands close attention and that is the matter of uniform mixing; another is the use of such techniques that reduce, if not eliminate, risk of recontamination with live virus. Failure to mix adequately will introduce such uncontrollable variables as may be described by the term "fractional

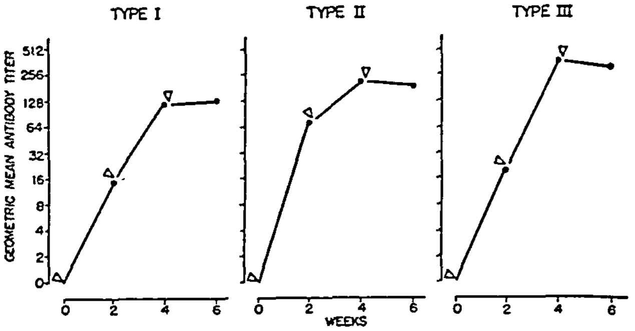

Fig. 4.—Geometric mean titers after each of three doses of reference vaccine "A," 1 ml. given intramuscularly to 20 subjects with no pre-antibody to any type.

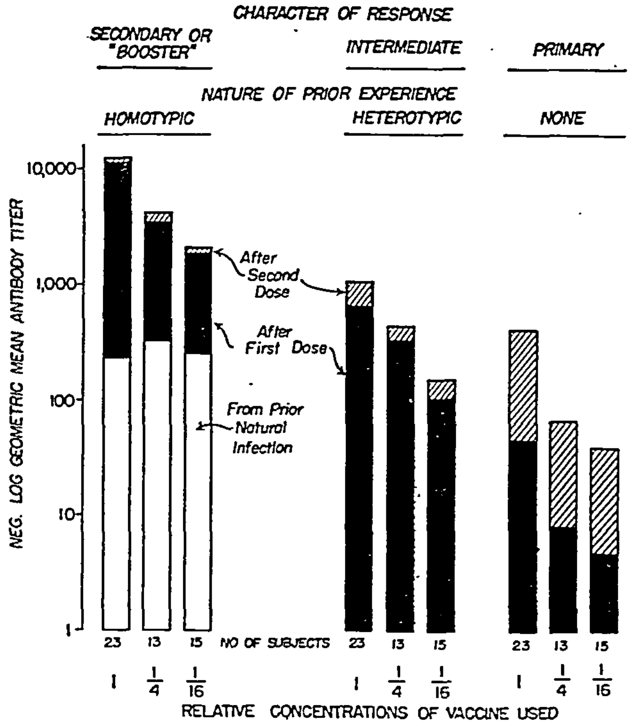

Fig. 5.—Different patterns of antibody response, depending on nature of prior immunologic experience, after two doses of reference vaccine "A" given two weeks apart, with blood drawn two weeks after each dose.

inactivation," and this may make it appear that resistant particles are present. Another factor is the use of filtration procedures to remove particles that might interfere with inactivation. As has already been mentioned, a check for any deviation from the expected is made by tests upon suitable samples removed at particular stages in the course of processing.

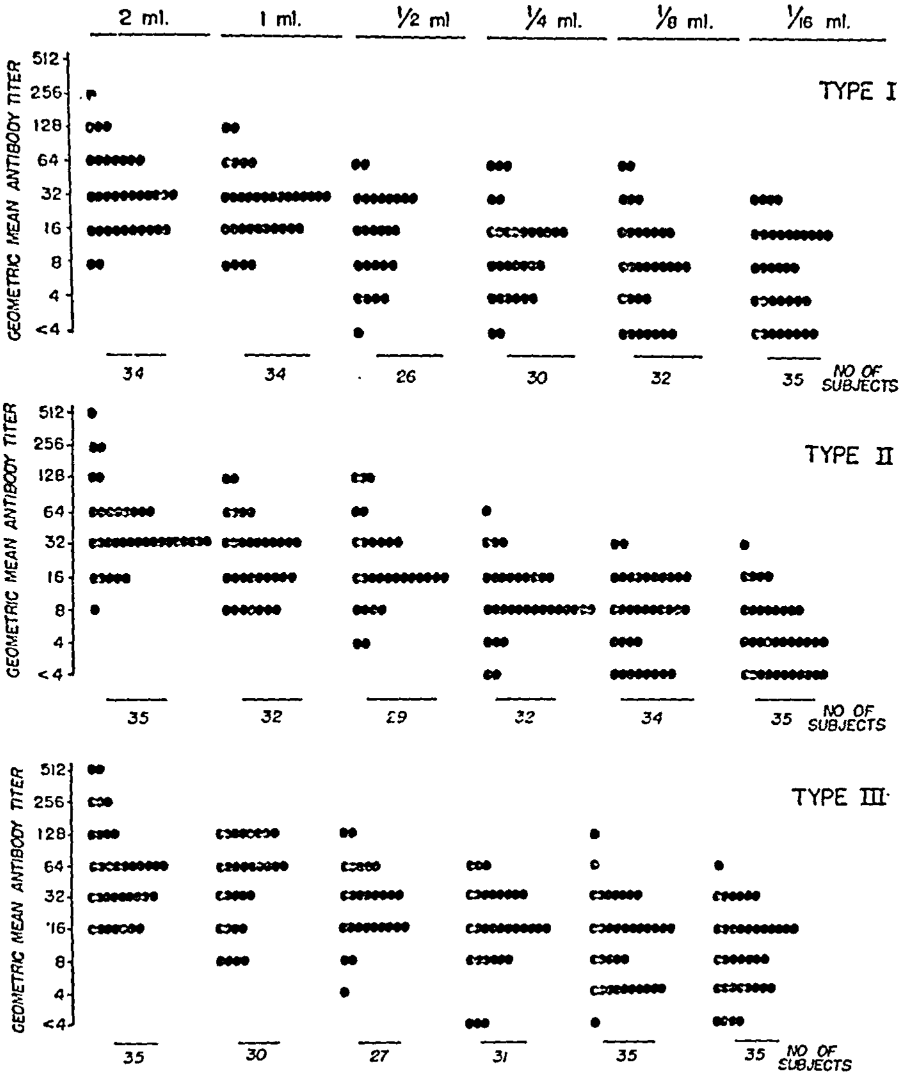

Fig. 6.—Dosage effect: Type 1, 2, and 3 antibody response two weeks after one dose of reference vaccine "A" given intramuscularly to subjects with no demonstrable preantibody to any type.

In the critical review that was made recently of the requirement for manufacture, tests were specified at two additional check points in the process, and the volumes of fluid to be tested at each step for each batch were set at fixed quantities. In addition, failure of a batch to be inactivated in the expected time would preclude its being reprocessed, and it is required that such batches be discarded. This is merely in conformity with the present requirement that there be demonstrated an adequate margin of safety for each batch of vaccine. The details that have been spelled out merely define what is meant by adequate margin of safety and in actual practice are further reinforced by requesting compliance with the original requirement that there be satisfactory consecutive experience of each manufacturer in being able to produce vaccine consistently free of living virus, and with the desired margin of safety.

It may be said that the design of the inactivation process, for the experimentally produced vaccine and for larger scale preparations, was intended to provide a quantitative expression of margin of safety. This was based upon the opinion that the testing merely of a sample of the final preparation, as is customarily employed for most biologicals, was inadequate for the special needs of the vaccine under consideration.

But there are still many other technical aspects of the broad problem upon which investigations will continue for a long time to come. One of these is in regard to the particular strains of virus for the most effective vaccine. Th strains selected for our very first studies wer chosen because, among many from which selec tions were made, these produced the highest in fectivity titers in tissue culture and were als shown to be highly antigenic in monkeys an man. It has now been found that, within broa limits, high infectivity and high antigenic p tency are not necessarily associated, and, in fac they are independent properties. These tren emerge from a series of investigations in whi strains are being selected that are among t most potent antigenically, and from among the we will select those that are of low pathogenic for monkeys when administered by periphe routes. The principle objective of this phase our studies is to incorporate in the vaccine type 1 strain that has the same attributes of h antigenic potency as do the MEF-1 strain type 2 virus and the Saukett strain of type that appear to be more potent antigenically t does the Mahoney type 1 strain; and while do so, to select one of low peripheral pathogeni for monkeys. But the latter is only a second consideration, since the first requirement t must be satisfied regardless of strain is that i rendered noninfectious for man. In studies w laboratory-selected variants that are aviru some are very poor antigens whether they used in their fully infectious form or after in tivation with formaldehyde solution (*Forma* This is something of considerable theoretical and p tical interest.

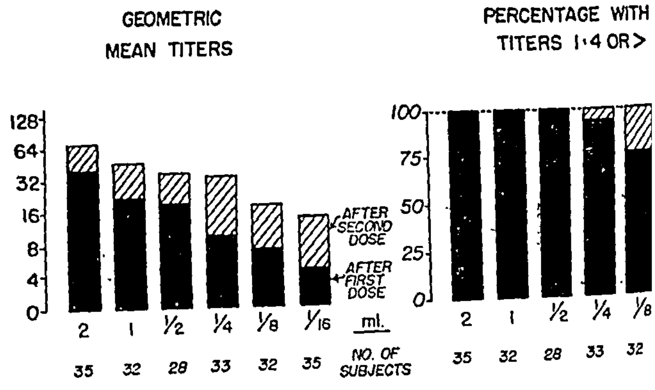

Fig. 7.—Type 2 antibody response two weeks after two do reference vaccine "A" given two weeks apart.

IMMUNOLOGIC FACTORS INFLUENCING VACCIN EFFECTIVENESS

The question of vaccine effectiveness is, of co secondary to the question of vaccine safety. I w therefore, like to discuss now the question of vaccin tiveness. Here we have two distinct issues: (1) the nediate one—the immune response that can be ex- ted after each of the three doses of vaccine, and (2) that arises later—regarding the degree of persistence immunity after the third inoculation. There is the fur- r question of the spacing and frequency, if later inocu- ons are required.

rimary Vaccine Response.—The various factors that uence the primary response to vaccine are illustrated a series of figures to follow. The first point that I wish make is that antibody response is influenced by prior munologic experience. For example, an individual o has not had any prior poliomyelitis virus infection cts quite differently to vaccination than does an in- idual who has had an infection with one or more of se viruses. This is illustrated in figure 3, where it may seen that the antibody response to the first dose of a atively poor vaccine was quite different in persons o had no previous immunologic experience as com- ed with those who had a prior infection with either e 2 or type 3 virus, or both; it is to be expected, of rse, that there will be a very different pattern of re- ivity if there has been a prior homotypic infection, ., type 1 in this instance. It should be clear from these ta that, from a practical point of view, it is necessary know the nature of the antigenic response in persons ho have had no prior immunologic experience if one to make valid comparisons concerning the nature of the influence of vaccine potency, time, and spacing of inoculations, and any other questions that can be answered only by the application of quantitative immunologic methods. It is for this reason that I will confine this presentation, except as necessary, to make a particular point, to data derived in studies in children who had not had any prior experience with any of the poliomyelitis viruses.

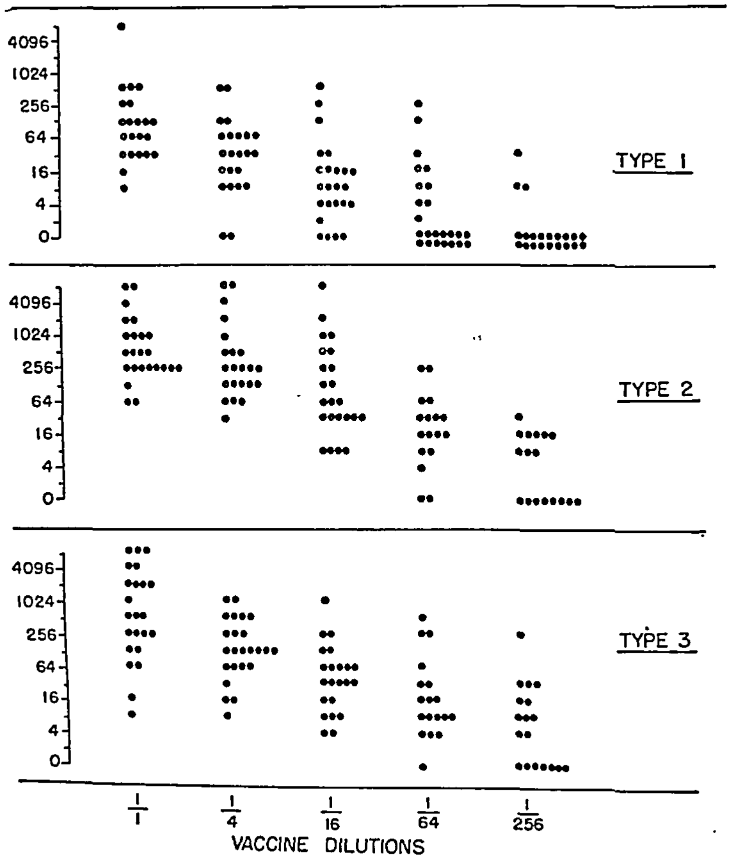

FIG. 11

Fig. 8.—Antibody response in groups of monkeys vaccinated with diminishing dilu- ns of reference vaccine "A" given in three doses intramuscularly, 1 ml. each week one ck apart, with blood drawn one week after third dose.

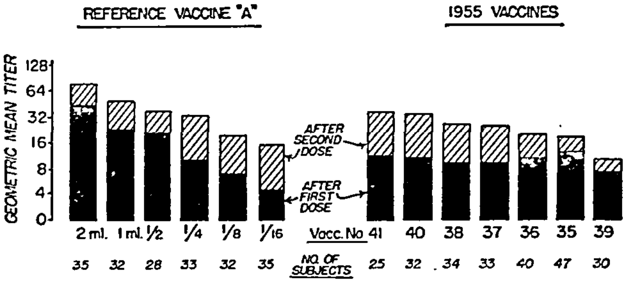

Fig. 9.—Comparison of seven lots of 1955 vaccine with reference vaccine "A." Type 2 response two weeks after two doses given two weeks apart.

Figure 4 illustrates the degree of antibody response after three doses of vaccine given to a group of children who prior to vaccination had no antibody to any of the three types. It is clear from this chart that a substantial response occurred after the first dose of vaccine, a moderate increase occurred after the second dose, but little or no increase occurred after the third dose when the three doses of vaccine, of the potency used here, were spaced with an interval of two weeks between each. The reason for the suggestion that the third dose should be postponed is indicated by these data, and the reason for the suggestion that an interval of seven months or more be used will be shown by the results of other experiments referred to later in this discussion.

Additional evidence showing the influence of two other factors; namely, vaccine potency and time for producing the full immunologic effect, superimposed upon the influence of the particular kind of prior immunologic experience, is illustrated in figure 5. This summary reveals that vaccines differing in potency in fourfold and sixteenfold steps elicit different degrees of antibody response. Moreover, a second dose produces substantially more antibody in persons who have had no prior immunologic experience as compared with persons who have had a prior heterotypic experience, or in persons who have had a prior homotypic experience. After the lapse of a suitable period of time after the primary and intermediate types of response, a later inoculation will then evoke titers to levels observed for the booster-type response (fig. 5). But, it is clear that the potency of the vaccine influences the degree of response regardless of the nature of the prior immunologic experience.

So as not to complicate these matters unduly, I would like to mention that the foregoing charts have indicated that persons with no antibody to any of the three types are the ones with whom we need be concerned chiefly;

two doses of vaccine, with spacing two weeks or longer, appears to be the most efficient way to administer vaccine for the relatively limited effect that can be induced in the primary stage. Moreover, it is clear that this primary effect is influenced by the potency of the vaccine used. Figure 6 shows in somewhat more detail the influence of vaccine potency in effecting a change in antibody status in groups of individuals who had no detectable antibody prior to vaccination. It is clear that when the dose given intramuscularly is varied from 2 ml. to 0.06 ml. that there is a spread in the difference in the frequency with which antibody appears and also variation in the degree of the average response. Thus, with a potent vaccine it is possible to induce the formation of antibody in all of groups of the sizes indicated, and with weaker vaccines proportionately lesser effects are induced. The data for type 2 are illustrated in figure 7 in a somewhat different fashion, showing the geometric mean antibody level after the first and after the second dose of vaccine; in addition there is shown the percentage of individuals who had no antibody to any type before vaccination but, as a result of vaccination, developed a distinctly measurable amount of antibody; comparisons are shown after the first and second dose.

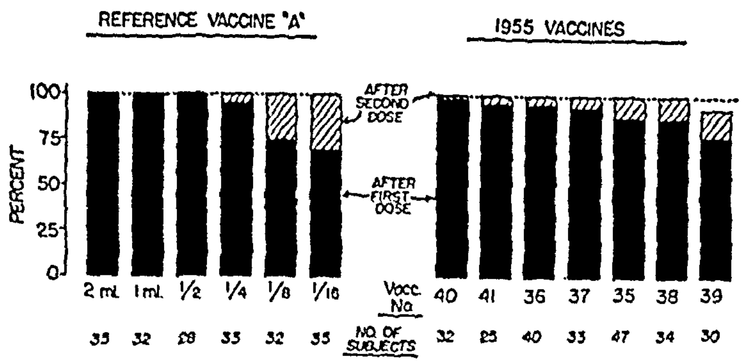

Fig. 10.—Comparison of seven lots of 1955 vaccine with reference vaccine "A." Type 2 response, showing percentage of subjects with demonstrable antibody (1:4 or more) two weeks after each of two doses given two weeks apart.

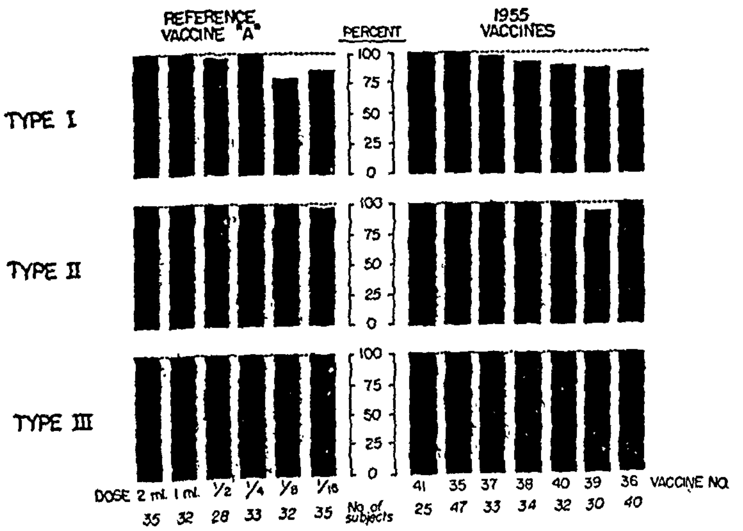

Fig. 11.—Comparison of seven lots of 1955 vaccine with reference vaccine "A," showing percentage of subjects with demonstrable antibody (1:4 or more) two weeks after two doses given two weeks apart.

The data in the foregoing figures were derived in the course of experiments designed to help establish the significance for man of a laboratory test for potency as performed in experimental animals. By varying the dose of reference vaccine "A," in studies both in man (fig. 6) and in laboratory animals (fig. 8), it then becomes possible to establish a basis for the significance of any laboratory test, whether it be done in monkeys, mice, guinea pigs, or any other animal. The underlying principle is the use of a standard reference vaccine for measuring potency in comparison with the unknown to be approved for use in man. To help further in this correlation, a group of seven batches of vaccine, prepared for use in 1955, was also tested in the same way, and the relative activity of these vaccines in children was compared with that of the different quantities of reference vaccine "A." The relative potency of the type 2 component of the commercially prepared material, expressed in terms of geometric mean titer of antibody, is shown in figure 9 and in terms of percentage of individuals who showed a response after the first and after the second dose (fig. 10). Similar data are shown in figure 11 for all three types, in comparison with different quantities of reference vaccine "A."

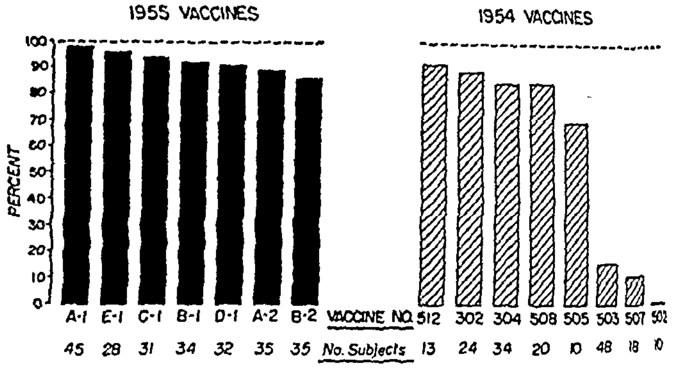

Fig. 12.—Percentage of children with no prior demonstrable antibody to any type who had a type 1 antibody response on the 14th day after first dose of vaccine.

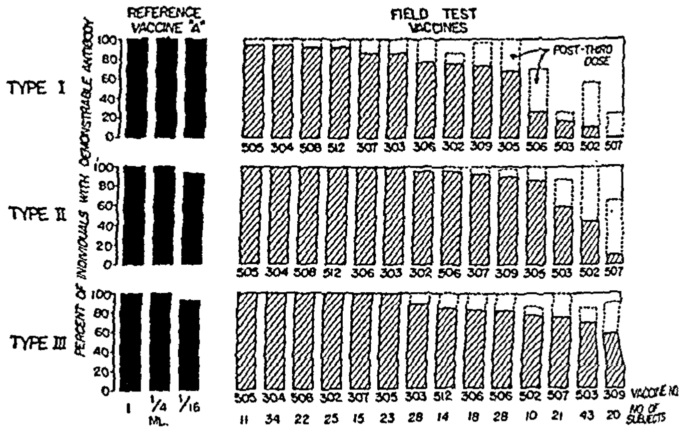

Fig. 13.—Antibody response in human subjects with no antibody for any type prior to vaccination, showing percentage of subjects with demonstrable antibody after two doses given two weeks apart (1954 field trial vaccines).

By means of such quantitative immunologic studies it is now possible, on the basis of a laboratory test performed in any of a variety of ways and in any of a number of animal systems, to predict the probable performance of any vaccine applied in human subjects so long as the vaccine in question is so constituted, and stored, that it will not deteriorate between the time of testing and the time of use. You will recall that in the vaccines prepared a year ago it has been established that the thimerosal (Merthiolate), or a decomposition product thereof, had an adverse effect upon the antigenicity, and particularly upon the type 1 component. The evidence suggests that this factor measurably influenced the response to the vaccines used in the 1954 field studies. This has been corrected by either (1) the elimination of a preservative, or (2) the use of thimerosal with edathamil (ethylenediaminetetraacetic acid), which tends to stabilize the thimerosal, or (3) the use of other preservatives. Any of the preservatives accepted for use must be shown to have no adverse effect upon the stability of the vaccine. That the vaccines used in the field trial were,[4] for the most part, less potent than those now available, is illustrated in figures 12 and 13. Figure 14 illustrates the difference in performance of vaccine with and without thimerosal, and of vaccine with thimerosal and edathamil, as compared with vaccine with no preservative.

Antibody Response to Vaccine Administered by Different Routes.—There have been a number of questions concerning antibody response to vaccine given by different routes. I would like to show, in figure 15, the data that are available on antibody response to vaccine given subcutaneously, intramuscularly, and intradermally. It is clear that 1 ml. of vaccine given intramuscularly or subcutaneously elicits about the same order of response; however, there seems always to be a slight advantage, as measured by mean antibody level, following intramuscular injection. When different quantities of vaccine given intramuscularly are compared with 0.1 ml. given intradermally, it would appear that the latter is about equal in effectiveness to 0.25 ml. given intramuscularly. Thus 0.1 ml. intradermally is not as effective, in inducing antibody formation, as is 1 ml. intramuscularly; but, it does appear that this small dose, given intradermally, is somewhat more efficient than a corresponding amount given intramuscularly.

Optimal Conditions for Eliciting the Booster Effect.—In the course of our earliest investigations, it became apparent that in man frequent multiple inoculations, given over a period of a few weeks, were an inefficient way of administering vaccine. It was apparent, furthermore, that the longer the interval between inoculations the better the effect. This total experience has indicated that 1 ml. of vaccine of reasonable potency, given to subjects who have no antidoby to any of the three types, will induce antibody formation in the majority, and a second dose, given two weeks or longer thereafter, will add to this effect; if a number of months is allowed to elapse, the advantage of the third dose will be increased as the time is prolonged, up to approximately seven months, or later, at which time it appears that the height of the hyperreactive state is reached. The evidence indicating the advantage of the relatively long interval between the second and third dose is shown in figure 16, which summarizes data from an experiment in which a sample of vaccine was used that, over the six month period of the study, was deteriorating because of the influence of thimerosal. In spite of this, the advantage of time is evident, but the full effect of the third dose that would have been elicited, had a more potent vaccine been used, is not clear from the mean antibody titers observed: Nevertheless, the trend in favor of the longer interval is evident.

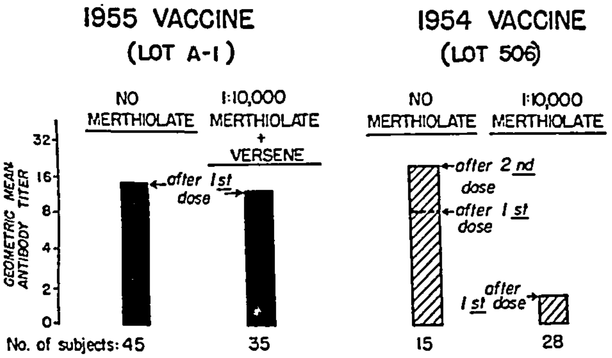

Fig. 14.—Type 1 response to 1955 vaccine (lot A-1) and 1954 vaccine (lot 506). In this instance Versene refers to edathamil (ethylenediaminetetraacetic acid).

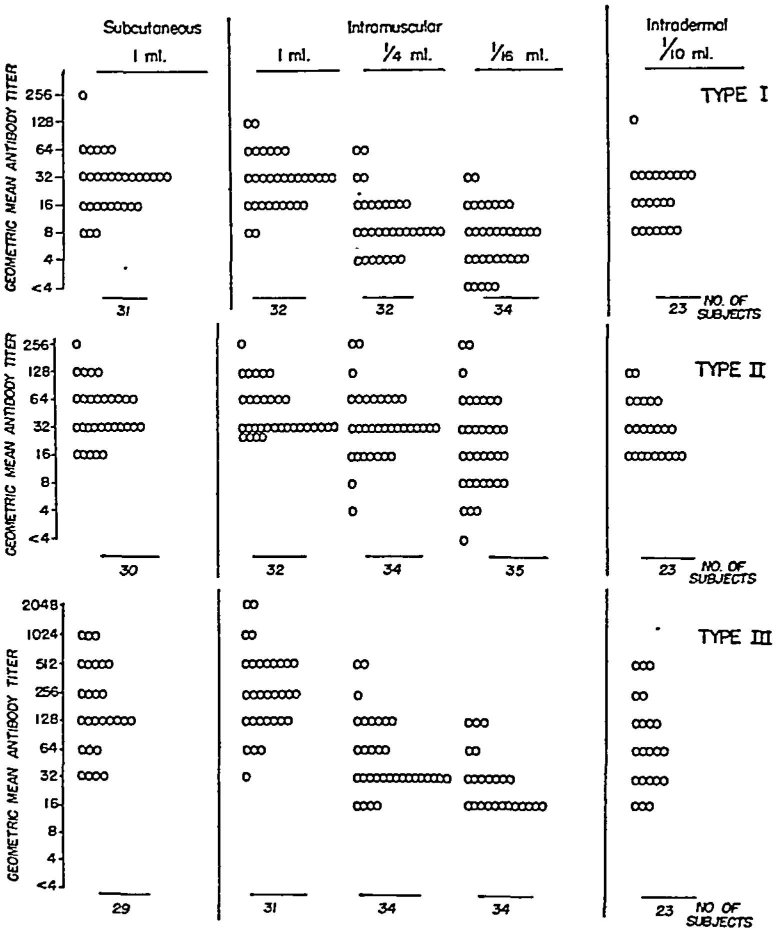

Fig. 15.—Type 1, 2, and 3 antibody response to reference vaccine "A" two weeks after two doses given two weeks apart by different routes of inoculation.

The influence of a more potent vaccine, when used for booster, superimposed upon a more adequate primary stimulus, is shown in figure 17. The degree of response during the primary phase, following the use of vaccine lots 303 and 507 is illustrated, as well as the degree of decline during the 10 months that followed; and then the degree of antibody response to the booster is also shown, along with the control representing the response of previously uninoculated children. Persons who initially had vaccine lot 303, and were then given one of the other commercial vaccines for the booster, exhibited marked rises in antibody to all three types. By comparison, individuals who had received primarily vaccine lot 507 experienced no booster effect to the type 1 component, a rather poor response to type 2, and a more adequate type 3 response. It is clearly evident that there must be a reasonably substantial primary effect for a full secondary, or booster, response. Other data bearing on the question of booster response, when the secondary stimulation is given seven months or longer after the primary, are shown in the next several figures. Here may be seen, in some instances, that even though little or no primary response was elicited, there appears to have been some sensitizing influence as evidenced by the hyperreactive response at the time of the booster.

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[4] Salk, J. E., and others: Antigenic Activity of Poliomyelitis Vaccines Undergoing Field Test, Am. J. Pub. Health 45: 151, 1955. Salk, J. E.: Vaccination Against Paralytic Poliomyelitis: Performance and Prospects, ibid. 45: 575, 1955.

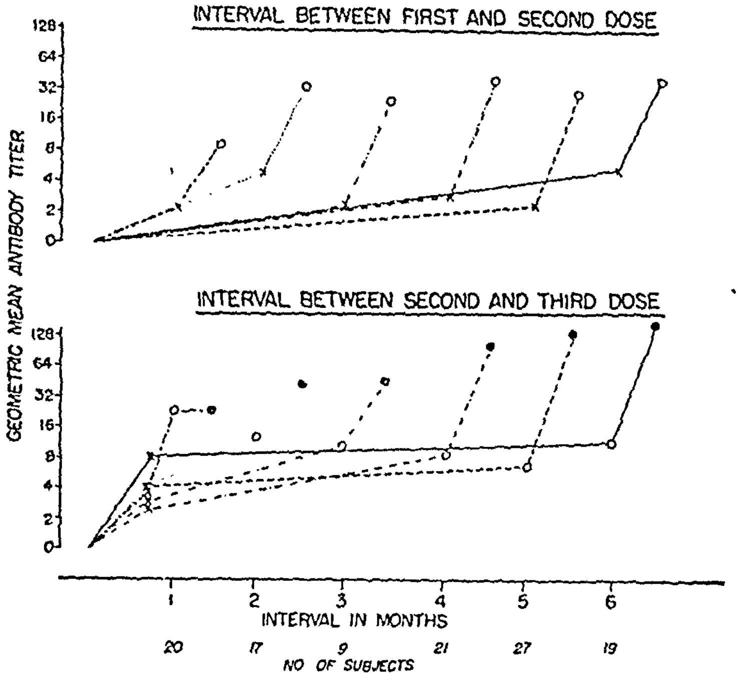


Fig. 16.—Influence of time intervals on type 2 response to second or third doses of vaccine (lot 309) in human subjects with no demonstrable preantibody to any type.

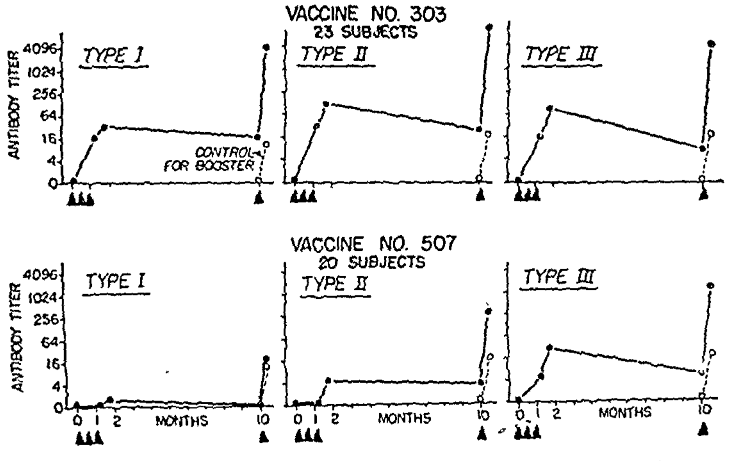


Fig. 17.—Effect of booster dose 10 months after vaccination with two different vaccine lots used in 1954 field trials.

The general pattern of response, as may be seen in these data, seems to be one in which there is a somewhat more rapid decline in the early postvaccination period followed by a more gradual decline or by a plateau, which suggests that antibody persistence following a course of vaccination of the kind here employed could be expected to persist for a number of years. Figure 18 summarizes observations in 14 individuals who, with exceptions, as noted at the different intervals, were followed for a period of one and one-half years. At that time a fourth inoculation was given to determine the character of the response that would be elicited. It is clear that the decline that occurred in the preceding year was replenished, and then exceeded to a slight degree by the second booster. These individuals will be followed to determine whether or not the rate of decline of antibody following the second booster is the same or, perhaps, more gradual than after the first. However, the magnitude of the level of antibody maintained during the year after the first booster, and the level achieved after the second is considerable, indeed. Several individual examples of persistence after primary, and of booster response, are shown in figures 19 and 20. It is to be noted that vaccine lot 503 was a relatively poor vaccine in comparison with the others used for boosters.

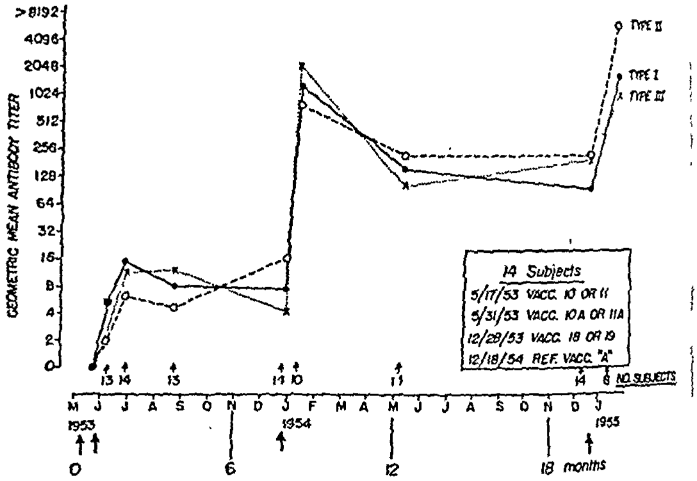
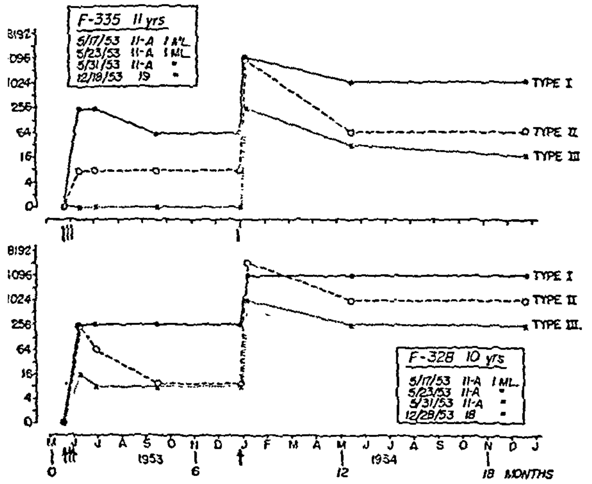


Fig. 18.—Antibody persistence after primary and secondary antigenic stimulation in children with no preantibody to any type who were observed over one and one-half years.

To provide further indications of trend in regard to persistence, data are presented in two individuals, of many, from whom blood samples have been tested two and one-half years after primary vaccination. These persons received 0.1 ml. intradermally of each of three virus types on two occasions, in August or September of 1952, and were then reinoculated almost two and one-half years later. The indications are that the relatively low levels of antibody, elicited by the primary immunizing procedure, tended to persist, and when a booster dose was given, even as long as two and one-half years later, a very sharp response was observed. The degree of persistence following the booster is now being followed. These examples of two and one-half year persistence are in persons who had antibody for only one type prior to first vaccination (fig. 21).

ntibody Response to Vaccination and Infection.— a matter of interest, let us compare the levels of body observed in vaccinated individuals with those erved in persons who have experienced natural in- ion. To illustrate this point, figure 22 shows the pre- cination and postvaccination antibody titers of a up of 61 individuals, for whom we had such data, n among those who had received their initial inocula- s with vaccines lot 303, 305, 306, or 512. In the booster period, the type 1 antibody levels of all in- iduals were below 1:32; 14 days after the booster y all had levels beyond this range, with a high pro- tion clustering at the level of 1:8,000+. For com- ison, there is charted the levels of antibody observed group of 56 persons with type 1 paralytic polio- elitis, and from whom serial bleedings were obtained pproximately weekly intervals while they were hos- ilized. The geometric mean level of antibody was 28 at the time of hospital admission and shortly r onset of paralysis; there was no serologic evidence prior infection with any other virus type. The anti- dy measurement recorded in this figure was the high- observed in the series for each individual; the geo- tric mean level of the highest titers was slightly less n 1:1024. From other experiences, it is to be ex- cted that these high titers will decline over a period of e and will stabilize at a mean level of approximately 128.



ig. 19.—Antibody persistence after primary and secondary antigenic ulation in two children with no preantibody to any type.

It is evident from these data that there occurred, as a ult of an infection with paralytic consequences, levels antibody that in general were higher than that induced primary vaccination with a killed-virus vaccine. How- r, it was equally clear that the level of antibody in- ced with a killed-virus vaccine, when a booster dose s given at a suitable interval, was higher than that luced by the infectious process.

In the right-hand portion of figure 22 are data from other group that is of interest. These data are from study of 27 children who had been vaccinated either in the spring of 1953 or the spring of 1954, and, in the course of follow-up bleedings, in the winter of 1953 or 1954, respectively, it was evident that these children had experienced a natural infection. This was indicated by the sharp difference in the level of antibody for one type only, when the early and late postvaccination blood samples were compared. In this group of 27 are 2 children who had a type 3 infection, diagnosed serologically; 12 had type 1 infections; 13 had type 2 infections. It is clear that the level of antibody observed in these subjects was, in general, higher than that observed in paralyzed convalescents. It is as if infection, in a previously vaccinated person, elicits a booster-type antibody response corresponding to the infecting type.

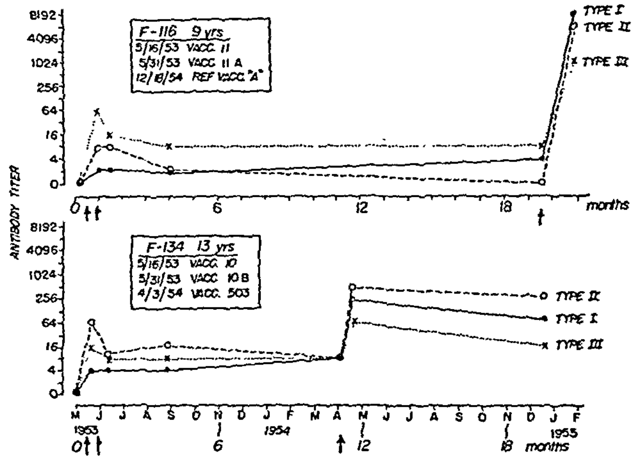


Fig. 20.—Antibody persistence after primary and secondary antigenic stimulation in two children with no preantibody to any type. who were observed over one and one-half years.

There is a similarity between the levels of antibody following a booster injection, and the postinfection levels in previously vaccinated individuals. The distribution of levels in each appear to be higher than that observed in recently paralyzed convalescents. It would seem from these data, therefore, that the assertion that the levels of antibody following the use of a killed-virus vaccine are lower than those observed in persons who have been infected is, indeed, true. But this is only part of the truth.

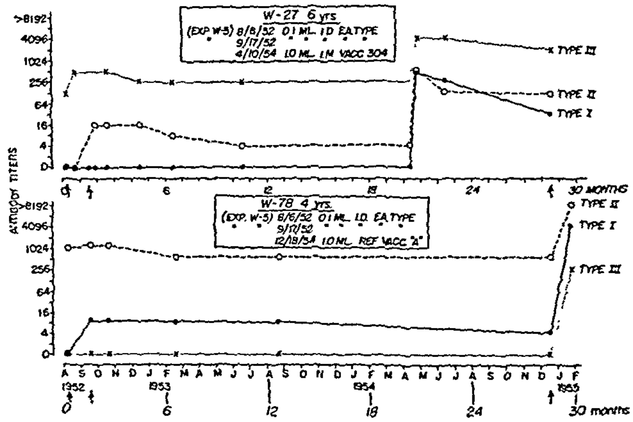


Fig. 21.—Observations over two and one-half years in two children of first group inoculated.

The whole truth indicates that the level of antibody induced by a properly prepared killed-virus vaccine, properly used, can be higher than that level induced by infection.

COMMENT

It should be clear from all that has been presented that the objective of the immunization process is to effect an immunologic response that will last for a considerable period of time. It appears that this can be accomplished by the introduction of an adequate antigenic mass, the influence of which will be evident after each of the three inoculations. The height of the antibody titer induced by the primary vaccinating doses (two doses spaced two to four weeks apart) is influenced by the intensity of the primary stimulus; i. e., dosage and potency of the vaccine. The height of the antibody titer after the booster dose is influenced by the length of the interval between the primary and secondary injections and by the size and potency of the booster dose. The level of antibody present at any given time after vaccination varies among individuals but is influenced by the total prior immunologic experience as well as by the interval that has elapsed after vaccination. The rate of decline from the different levels achieved after primary and booster doses has been described and in general appears to be more rapid shortly after the postinoculation level; this is followed by a plateau or a very gradual decline. In addition to these effects that are measurable directly, there appears to persist a state of heightened immunologic reactivity that is evident upon reinoculation or upon exposure. This state of hyperreactivity probably does not decline with time. Because of it, antibody levels may be further enhanced by revaccination, if need be, or will be augmented in the course of natural exposure.

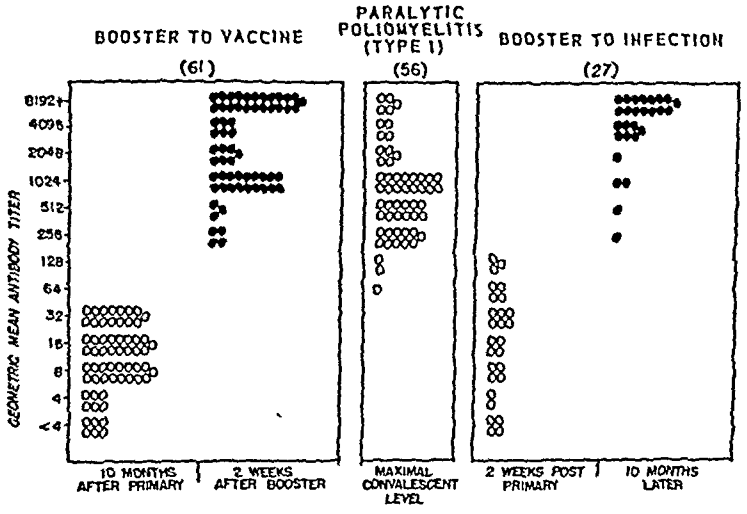


Fig. 22.—Comparison of antibody response to vaccination and to infection.

Although we have said that the ultimate objective of these investigations is to provide the basis for the preparation and the use of a safe and effective vaccine against paralytic poliomyelitis, the orientation of our studies at this time is to determine the degree of completeness with which effectiveness can be demonstrated—first, by means of blood tests, and, ultimately, by performance in the field. Thereafter, both by blood tests and by field experience, it will be possible to determine whether further inoculations beyond the course now recommended will be required—and if so, when. As for the resolution of the problem of vaccine safety, this is linked to an understanding of the dynamics of the virus inactivation reaction and the application of this knowledge. As for the resolution of the problem of effectiveness, this will come from an understanding of the dynamics of the immune process, upon the basis of which recommendations may be made; physicians and health officers can then apply vaccination to elicit its full potential effectiveness both in the individual patient and in the community as a whole.

The Mutation of Viruses.—In 1918 and 1919 influenza, known for centuries as a distressing but seldom fatal disease, suddenly turned virulent and swept across the world in the greatest epidemic of modern times. Then, just as suddenly, the fatal form of influenza disappeared, leaving some 25 million dead. Where had this scourge come from and where had it gone? At the time there was no accepted answer. We now know that influenza is a virus disease, and we believe that the 1918-1919 pandemic was simply a catastrophic example of biological mutation. . . . What chemical events occur when a virus mutates? . . . All known viruses have two chemical constituents: protein and nucleic acid. Like other proteins, virus proteins are very large molecules composed of much smaller units, the amino acids. The protein can easily be broken down into these units, and it is found that there are only some 20 different amino acids in even the most complex protein. Nucleic acids, found in all living cells, are also huge molecules. They can similarly be broken down into a few simple components; inorganic phosphate, two sugars and five organic bases. To the best of our present knowledge, these simple constituents of proteins and nucleic acids (with a few exceptional derivatives and close relatives) are the building blocks both of all viruses and of the chromosomes of all living things. . . . If the biological properties of a virus differ from those of its parent, is this difference reflected in the make-up of its protein? This question was investigated with the famous virus that causes the mosaic disease of the tobacco plant. . . . One of the most interesting results came out of the comparison of the original tobacco mosaic strain and a "killer" strain called J14D1. Young Turkish tobacco plants infected with the original strain suffer a characteristic mottling of the leaves accompanied by a certain amount of blistering, distortion and stunting. However, the plants continue to grow, reach maturity, flower and bear viable seed. Identical young plants infected with J14D1 are rapidly killed. Yet the killer strain differed from the original one only in its proportion of two amino acids: glutamic acid and lysine. Even in this proportion it differed from the original strain only by 10 to 20 per cent. In all other respects the two strains seem identical. This is a striking illustration of how small the chemical difference between a mild strain of virus and a killer may be.—C. A. Knight and D. Fraser, The Mutation of Viruses, *Scientific American,* July, 1955.

PUBLIC HEALTH IMPLICATIONS IN A PROGRAM OF VACCINATION AGAINST POLIOMYELITIS

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and
James A. Shannon, M.D., Bethesda, Md.

In public health and preventive medicine, the application of a new prophylactic agent, whether to large population groups or to an individual patient, requires careful consideration of many factors. The safety, potency, and efficacy of the agent are primary considerations. To these must be added problems of dosage, methods of administration, and the possibility of undesirable reactions in patients. In the case of large-scale immunization programs, account must also be taken of the cost and availability of the agent and the organization of personnel and facilities. These many technical, medical, and administrative problems must be weighed against the seriousness of the disease and the vulnerability of particular population groups. The use of the Salk vaccine against paralytic poliomyelitis has presented all of these general problems and some specific problems that were unanticipated by many individuals and groups working with the program. Our purpose is to present a brief report on some of these problems and the measures adopted for their solution.

PROBLEMS OF QUALITY CONTROL

The Biologics Control Law of the United States was first enacted in 1902. With minor changes, it was reenacted as Section 351 of the Public Health Service Act of 1944. Under this law, manufacturers are licensed by the Secretary of Health, Education, and Welfare, to produce specific biological products for interstate sale and for export. Licenses are issued by the Secretary upon recommendation by the Surgeon General of the Public Health Service. The minimum requirements to assure the safety, purity, and potency of each product are issued by the Public Health Service. The regulations governing biologics control are promulgated under the law by the surgeon generals of the Public Health Service, the Army, and the Navy, with the approval of the Secretary. Since 1902, the Public Health Service has maintained a biologics control unit staffed with competent scientists and devoted exclusively to the research, testing, inspectional, and administrative aspects of this statutory function. The legal responsibilities of the Public Health Service for promulgating standards for the quality control of biological products sold in interstate commerce have governed the official position that our organization has occupied in the 1955 poliomyelitis vaccination program.

Until April 12, 1955, however, poliomyelitis vaccine was an unlicensed, experimental product. The vaccine used in the field trials of 1954 was produced by commercial manufacturers under contract with the National Foundation for Infantile Paralysis, in accordance with specifications furnished by that organization. These specifications were drafted between December, 1953, and February, 1954, on the basis of information from numerous sources and were adopted by the National Foundation's vaccine advisory committee. Dr. Salk provided information about his own laboratory experience in the development and experimental testing of the prototype vaccine. The Connaught Medical Research Laboratories of the University of Toronto, Toronto, Canada, shared its experience in the growing of virus in large quantities by tissue culture methods. At the request of the Foundation, Dr. William Workman, Chief of the Laboratory of Biologics Control of the Public Health Service, and Dr. Joseph Smadel of the Army Medical Services Graduate School provided their expert knowledge of biologics manufacturing to aid in developing the specifications. The vaccine advisory committee expressed its confidence in the safety of the proposed product under the conditions prescribed in its specifications. Trivalent-pool material from each lot of vaccine used in 1954 was tested by the manufacturer, by Dr. Salk, and by the Laboratory of Biologics Control prior to final filling of the containers.

Production and testing in the first few months of preparation for the field trials were fraught with difficulties. Live virus was found in some preliminary lots that were rejected. The results of tests on specific lots varied in the three testing laboratories. However, by the time the vaccine advisory committee decided to go ahead with the field trial, two manufacturers had produced a series of lots consistently reported negative by all three laboratories. More stringent tissue culture tests had been incorporated in the requirements. Dr. Salk also had vaccinated 7,507 children with vaccine prepared by the manufacturers, with no harmful effects. This test was regarded as a good preliminary check on the safety of commercially produced vaccine. The Laboratory of Biologics Control had participated in all these developments. In recognition that manufacturers would apply for licenses to produce the vaccine, if the field trials were successful, the Laboratory, on May 20, 1954, issued tentative "Minimum Requirements, Poliomyelitis Vaccine." Vaccine manufactured prior to April 12, 1955, was prepared to meet these provisional standards.

Licensing and Production.—Immediately after the now-historic presentation of Dr. Francis' report on the 1954 field trial, a group of scientists met with the Chief of the Laboratory of Biologics Control at Ann Arbor, Mich., to advise on the licensing of production of the vaccine. The advisory group unanimously recommended licensing, and Dr. Workman transmitted his favorable

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Surgeon General, U. S. Public Health Service, Department of Health, Education, and Welfare (Dr. Scheele), and Associate Director, National Institutes of Health, U. S. Public Health Service, Department of Health, Education, and Welfare (Dr. Shannon).

Read in the Panel Discussion on Prospects for the Control of Poliomyelitis before the Joint Meeting of the Section on Pediatrics and the Section on Preventive and Industrial Medicine and Public Health at the 104th Annual Meeting of the ican Medical iation, Atlantic City, June 7, 1955.

recommendation to the Surgeon General in Washington, D. C., who in turn recommended that the Secretary of Health, Education, and Welfare issue product licenses to the six firms whose applications were pending. These were the Cutter Laboratories; Eli Lilly & Company; Parke, Davis & Company; Pitman-Moore Company; Sharp & Dohme; and Wyeth Laboratories, Inc. The decision to license was based on the following factors. Each of the manufacturers is an established and reputable firm with which the Laboratory of Biologics Control has dealt for many years. Each held a general license to manufacture biological products. Each held licenses to produce numerous specific products. Each plant had been inspected during the period from September, 1954, through January, 1955, and the facilities for manufacturing and testing poliomyelitis vaccine had been found acceptable. The competence of the scientists in charge of production in each plant was known and respected. All but one firm (Sharp & Dohme) had had experience producing the vaccine in 1954. The manufacturers were considered to have overcome the earlier difficulties in obtaining a safe commercially produced vaccine. The Laboratory of Biologics Control had done complete tissue culture and monkey tests on six lots from five manufacturers (excluding Lilly) and numerous tissue culture tests on other lots from all manufacturers. The final factor in the decision to license was the evidence of safety and efficacy presented by Dr. Francis' evaluation of the field trials.

Thus, the national program of poliomyelitis vaccine release began on April 12. Stocks of vaccine were on hand, tested by the manufacturers in anticipation of licensing. Some lots had been completely tested at the National Institutes of Health, but tests on other lots had not been completed. Lots that had passed safety tests in the manufacturers' laboratories were released. No lot was released whose protocol did not show a clear record of performance in the manufacturer's tests. The situation with respect to poliomyelitis vaccine was unique. In contrast with the very slow, gradual development of other prophylactic agents, a great deal of experience in the use of this vaccine had been accumulated in the space of two years. The full record of events in the manufacture and testing of each lot (a protocol) had been successfully used for many years to evaluate the manufacturer's compliance with regulations or standards established for numerous biological products. The staff of the Laboratory of Biologics Control concluded that release on protocol review would be sufficient on this product.

In addition to Dr. Salk's trials with vaccine produced in his laboratory, covering approximately 14,000 individuals, more than 400,000 children had received commercially produced vaccine in 1954. The evidence from the field trial evaluation was interpreted to indicate the safety of commercial products, as prepared for that experiment. It was also believed that the manufacturers, armed with additional experience in production and with testing standards then thought to be adequate, would be able to prepare vaccine with a satisfactory margin of safety. The favorable experience with tests of numerous lots from all manufacturers was interpreted to support confidence in the process, the testing requirements, and the manufacturers' ability to apply them. During the last week of April, 1955, when cases of paralytic poliomyelitis were reported in children vaccinated with materials produced by the Cutter Laboratories, the Public Health Service immediately requested the withdrawal of all lots of that manufacturer's product that had been released previously. Simultaneously, a thorough investigation of the plant was instituted, and extensive laboratory tests of the material were begun. Studies of the production and testing of poliomyelitis vaccine in the hands of the other licensed manufacturers were also undertaken. The purpose of these studies was to review the total experience of the manufacturers in the production and testing of poliomyelitis vaccine, in order to determine whether there were common problems related to the basic method of production and the the adequacy of testing requirements. It was believed that should such common problems exist, steps could be taken to improve the methods of production and increase the adequacy of testing before additional lots of vaccine were released. The production records of all lots of vaccine that any firm had produced for the 1955 program, whether submitted for release or not, were studied. We then learned that such common problems had, in fact, existed. The producers had had difficulties in processing and testing some lots. If lots were clearly unsatisfactory, the manufacturers did not offer them for clearance, and therefore the protocols were not submitted and studied. The difficulties experienced by the manufacturers, as well as their successes, were now seen to provide valuable information that led the Public Health Service to require more adequate safety testing. The biologics control procedures in use prior to, and immediately after, April 12 had failed to provide adequate review of this total experience, with its inconsistencies in the behavior of a new and complex product, now being dealt with in large-scale production. In Cutter Laboratories' case, the health service is comparing that manufacturer's experience with the data recently accumulated from other producers, in an attempt to determine the extent to which the Cutter operation involved problems common with those of other manufacturers and the extent to which unique problems might account for the probable presence of active virus in a few lots of the Cutter material.

Decisions and Actions.—Outstanding virologists and epidemiologists from several private and public institutions have assisted in this review of manufacturing and testing procedures. Both technical and management representatives of all six licensed firms have cooperated fully in providing full information on their experiences. In brief, the information and advice derived from these studies and consultations during the past six weeks, have led to the following decisions and actions on the part of the Public Health Service: (1) request that the Cutter Laboratories withdraw all its supplies of poliomyelitis vaccine and initiation of thorough investigation, April 27; (2) activation of a Poliomyelitis Surveillance Unit in the Communicable Disease Center (PHS) to conduct epidemiological studies of poliomyelitis cases in vaccinated individuals, April 28; (3) initiation of additional laboratory studies of the vaccine from all manufacturers and halt in release of additional lots, April 30; (4) recommendation that the vaccination programs be halted until further information could be obtained on quality of vaccine, May 7 (based on presentation by manu- turer's technical representatives of new data on pro- ction problems); (5) inspections of plants of five li- sed manufacturers, May 9-20, with subsequent clear- ce of some lots previously released and of additional s awaiting release; (6) establishment (May 26) of a manent Technical Committee on Poliomyelitis Vac- e to review lots of vaccine, to recommend action on m under the revised standards, and to guide future de- opment of the vaccine program, seeking further im- ovements and refinements both in production and test- ; and (7) revision of the minimum requirements for oduction and testing with announcement of the ended standards, May 26.

SCIENTIFIC BASES OF REVISED MINIMUM REQUIREMENTS

The body of new information acquired in the past six eks is the basis of changes both in manufacturing pro- lures and testing. Although these changes have pro- ced a dearth of vaccine at present, they will make pos- le a safer vaccine when the product begins to flow ain in channels of distribution. Dr. Salk has presented some detail the background of information upon ich his contributions rest. What we shall present re- es primarily to the problem of safety and originates in demonstration that safety and effectiveness are not ompatible.

Strain Selection.—The selection of the Mahoney ain for the type 1 component of the vaccine requires ecial comment. This strain is characterized by great ulence because of its capacity to multiply rapidly in traneural tissues. Because of this characteristic, it is at ist theoretically possible for a minute dose of living us to produce incapacitating paralysis. The hazard of Mahoney strain has led some virologists to criticize inclusion in the Salk vaccine, despite its ability to in- ce a high titer of type 1 antibody. This objection has l those responsible for vaccine development in Den- irk to exclude it in their routine vaccine production is spring. They have used the Brunhilde strain and ve compensated in part for its poorer antigenic proper- s by including proportionately more type 1 antigen an types 2 and 3 in the final vaccine.

Inactivation.—An important feature of Dr. Salk's nception of the preparation of a suitable vaccine lies the principle that presumes a large margin of safety the inactivation process itself.[1] This point warrants iscussion. Figure 1 shows the theoretical course of an iactivation process as envisaged by Dr. Salk. It starts ith the concentration of tissue culture infective doses one million per milliliter, a common concentration. uring the initial phase of the inactivation process, the g of the virus concentration falls linearly with time, id 48 to 72 hours later reaches zero. At this time, the ation of live virus is 1.0 tissue culture infective illiliter of viral suspension. Figure 1 has been the intercept time of the inactivation at three days. By extrapolation, the ssumed to be reduced to 1.0 tissue cul- it per one million milliliters at six days, culture infective unit per 1.0×10^{-12} ml. at nine days. This concentration is of such a low order that its significance can be grasped only when the numbers are reduced to common terms. The prediction means that if the reaction proceeds as indicated in figure 1, there will be a concentration of living virus in the order of 1 tissue culture infective unit in each million tons of inactive viral suspension, at the end of nine days. During the production of field trial vaccine, when the initial part of the reaction was shown to proceed according to the original concept, the single strain pool was considered suitable for pooling without further examination for live virus.

There are alternatives to this theoretical conception. The viral suspension is not a monophasic system but consists of a number of discrete particles in suspension. At high concentrations, these may behave in a manner not dissimilar to a monophasic system, and during the first period of inactivation process the system may yield data that are describable by a simple equation derived from the law of mass action. However, with the progression of the reaction and at lower live particle concentrations, the heterogeneity of the system should assert itself. The course of the reaction under this circumstance may depart from that of a simple first-order reaction, as derived from the law of mass action or from concepts of surface chemistry of a simple system. In high dilution, the residual live virus will probably consist of particulates of varying size and shape and in varying degrees of aggregation. Particulates contained in such a mixture cannot be expected to inactivate at the rate calculated from the behavior of the reaction during its initial phase. During this phase, the reaction will be dominated by that portion of the particulate mass that is more easily inactivated. This would appear to be the bulk of the material undergoing inactivation. The extent to which the inactivation process departs from a straight line, even in the initial phase, will be a reflection of the extent to which the particulate mass is composed of particulates

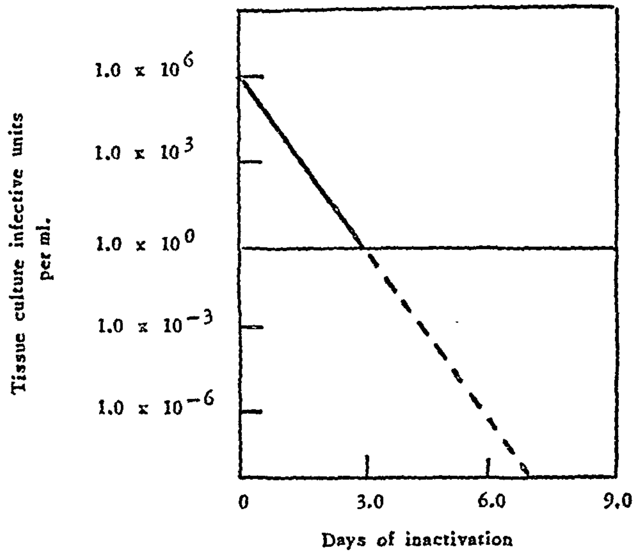

Fig. 1.—Theoretical curve of inactivation of poliomyelitis virus (after Salk).

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[1] Salk, J. E., and others: Formaldehyde Treatment and Safety Testing of Experimental Poliomyelitis Vaccines, Am. J. Pub. Health 44:563-570 (May) 1954.

of differing sensitivity (an index of heterogeneity) and the extent to which there are other physical and chemical variations in different proportions of the total suspension (problems of mixing).

These considerations have a practical bearing on manufacturing problems. Heterogeneity in the system can operate to remove the so-called built-in factor of safety. This consequence is demonstrated graphically in figure 2. The system is obviously more complex than is given in this example, which merely points up the importance of a minute portion of the initial virus mass in conditioning the later stages of the reaction. Additional formal treatment is not warranted. In figure 2, curve *A* describes the reaction proceeding in the original conception (fig. 1) when the concentration of live virus at the beginning of the reaction is one million per milliliter (1.0×10^6). Curve *B*, in which the initial live virus concentration is taken to be 1,000 particles per milliliter, shows a similar reaction proceeding at a rate one-half as fast as in curve *A*. In curve *C*, the rate is one-fourth of *A* and the initial live virus concentration is taken at 13 particles per milliliter. The composite inactivation curve of a mixture of the three is shown as curve *D*. Starting with a suspension composed of the three types of particles in the assumed concentrations, the summation of the three reactions will be dominated by reaction rate of curve *A* initially and of curve *C* at a later time. Hence, we may conclude that observations during the initial phase of the reaction do not constitute an adequate basis for judgment of the course of the remainder of the reaction in these circumstances.

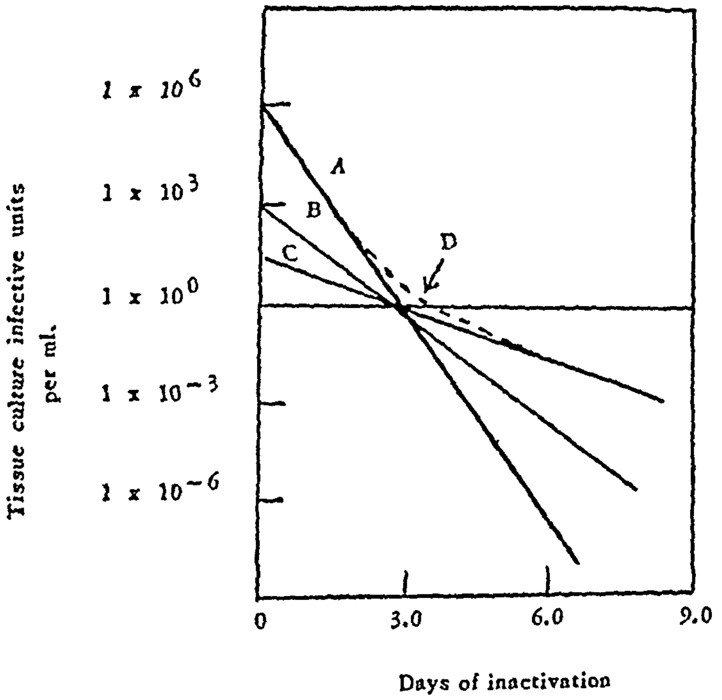

Fig. 2.—*Inactivation of poliomyelitis virus. A, reaction when concentration of live virus at the beginning is one million per milliliter. B, initial live virus concentration is 1,000 per milliliter. C, initial live virus concentration is 32 per milliliter. D, composite inactivation curve of a mixture of the three.*

Another factor argues against acceptance of the original concept as a basis for an interrelated combination of inactivation and safety. The suspending solution contains protein coagulable by formaldehyde, which favors the formation of viral particulates occluded in minute protein precipitates not generally distinguishable to the eye. Such particulates would be relatively inaccessible to the inactivating formaldehyde. The extent to which a combination of the foregoing factors influences the course of inactivation will also be reflected in the extent to which the actual curve of inactivation departs from a straight line.

SAFETY TESTING

A safety test, generally speaking, is a laboratory procedure utilized as a part of quality control to separate that which is unsuitable from that which is suitable. Safety tests for the Salk poliomyelitis vaccine were devised mainly to find contamination and process failures from accidents in manufacture and not to detect small amounts of residual live virus that the process was believed to have reduced to an immeasurably low, harmless level. The primary safety data were conceived as being those that described the initial stages of the inactivation process. The prime factor of safety, according to the original conception, was built into the process of inactivation. However, insofar as the process departs from that theoretical conception, whether because of deficiency in the conception or because of inadequacies in the handling of the process, the safety testing becomes of increasing importance both as a guide to processing and as a final determinant for safety. The two tests for the presence or absence of live virus utilized in the quality control of the vaccine are the monkey test and the tissue culture test, in routine manufacture.

Monkey Test.—The monkey test is very crude, as was demonstrated in the spring of 1954, incidental to the preparation of material for the field trial. This will not be discussed, except to point out that the inability of this test to discriminate between vaccines containing low concentrations of live virus demonstrable by tissue culture and those containing none, has been the common experience of each of the manufacturers. Their data show repeatedly that live virus detectable by tissue culture is not detected by the monkey test as presently performed. Consideration should be given to increasing the sensitivity of the monkey test by concentration of the test material. Otherwise the test should be discarded.

Tissue Culture Safety Test.—Certain assumptions have been made as a basis for analysis of the sensitivity and reliability of the tissue culture safety tests. In general, these assumptions provide an estimate of greater reliability than actually obtains. A somewhat comparable analysis with respect to vaccine for foot-and-mouth disease has been made by Henderson,[2] and include the following assumptions. 1. Residual live virus can be defined in terms of the number of discrete particulates, varying from zero to some finite number, contained in a unit volume (1.0 liter) of antigen suspension. 2. Random distribution (truly effective mixing) of these particulates obtains. 3. One particulate is an effective dose for a sensitive tissue culture preparation. More than one particulate is required for an insensitive tissue culture preparation or for an infection in a series of relatively nonsensitive tissue culture preparations. 4. The total volume of virus suspension is no less than 10 liters.

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[2] Henderson, W. M.: Significance of Tests for Non-Infectivity of Foot-and-Mouth Disease Vaccines, J. Hyg. **50**:195-208 (June) 1952.

Certain statistical probabilities have been calculated, using the Poisson distribution, which is applicable in this case. Table 1 shows the probability of failing to demonstrate live virus at different concentrations when different size samples are tested. Table 2 shows the chances of picking up a positive lot, when the upper level of acceptable viral concentration is set at 5 infective units per liter and with the sample volumes commonly used by each of the manufacturers of the vaccine. One milliliter was tested in tissue culture for each liter of single-strain and polyvalent pool. It is quite apparent that different standards of acceptability as regards the possible presence of infective particles have been incorporated into the processes of the different manufacturers. This variation stems from the erroneous assumption inherent in the "Minimum Requirements of April 12, 1955" that the volumes used in the tests should be directly proportional to the total volume tested. Routine testing on such assumptions would not provide a reasonable assurance of the absence of live virus in the finished vaccine of certain of the manufacturers. It is important to note, however, that the volume of material tested in clearing vaccine for the field trial in 1954 would place an even lower value of confidence in this material. A more rational basis for safety testing has been adopted. The objective has been to design a testing procedure that will identify lots of vaccine containing more than a given concentration of live virus particulates. Such a procedure does not bear upon the level of viral concentration that will be infective to man. (Actually the determination of the infective level for man is today beyond the possibility of direct examination.)

TABLE 1.—*Size of Sample Needed to Keep Probability of Getting Negative Test Result Below Specified Level at Certain Postulated Concentrations of Particulates Containing Live Virus and at Two Levels of Test Sensitivity in Lots of Ten Liters or More*

	Assumed Concentration of Infectious Unit per Liter		
Probability of Getting Negative Result	5	10	100
Test Sensitivity Level 1			
One Particulate Required for Positive Test. Sample Required, Ml.			
0.10	460	230	23
0.05	600	300	30
0.01	920	460	46
0.001	1,330	690	69
Test Sensitivity Level 2			
Two Particulate Required for Positive Test. Sample Required, Ml.			
0.10	778	389	39
0.05	918	474	47
0.01	1,328	664	66
0.001	1,846	923	92

MANUFACTURING EXPERIENCE

The systematic survey conducted in each of the plants producing poliomyelitis vaccine has been mentioned. Some of the results of this survey are presented here. The process of inactivation of the poliomyelitis vaccine when done on a large scale does not seem to follow the original concept in the hands of any manufacturer with any degree of reliability, as shown in part by a curvilinear, rather than a straight-line, relation between time and the log of the residual live virus in the initial phases of the reaction. It is also evidenced by the frequent occurrence of a positive tissue culture test from 9 to 12 days after the beginning of the inactivation process. It is also apparent that the inactivation process has not yielded consistent results in the hands of most of these manufacturers. That is to say, the initial test performed at the time when all live virus was presumed to have been inactivated shows that an appreciable proportion of single-strain pools still contained live virus (table 3). This is an important finding. It demonstrates that the departure of the process from the theoretical conception greatly diminishes the factor of safety that was believed to have been built into the basic process. Consequently, principal reliance for the exclusion of live virus must be placed upon the safety test in the final vaccine.

TABLE 2.—*Size of Sample Used in Safety Testing, by Tissue Culture, Prior to May 22, 1955*

	Size of Sample, Ml.		
Laboratory	Single Strain Pool	Polyvalent Pool	Chances of Picking Up Positive Lot,* %
A	60	150-175	70
B	500	360	99
C	400-500	1,200-1,600	Over 99.9
D	25	300	80
E	40-45	140	60-70

* Assuming lot had five tissue culture infectious doses per liter and assuming high sensitivity for all tissue cultures.

The data on the safety tests performed immediately after combination into trivalent pools offer further evidence of inadequacy (table 4). Live virus was frequently found in a trivalent pool when this had been presumed to be free of live virus on the basis of testing applied to the monovalent pools that composed it. In the hands of certain manufacturers (for example, laboratory C), when the trivalent pools were formed prior to the completion of the safety tests of the single-strain pools, it was impossible to predict the outcome of the tests (table 5). One can only conclude from such data that the tissue culture test for active virus, as applied to the single-strain pool, was not an adequate process guide, nor did it provide a sense of security that sizeable concentrations of live virus would not be included in the trivalent pool. This again emphasized the inadequacy of the safety tests as performed during the period of processing and placed an even greater burden on the final safety testing of the trivalent pool just prior to subdivision and packaging.

TABLE 3.—*Positive Single Strain Pools on Initial Test*

	Lots	
Laboratory	No.	% Positive
All	809	11
A	97	21
B	234	19
C	85	8
D	267	5
E	126	2

Detailed tables show an almost random distribution of positives in relation to processing data. Positive tests occurred in a sufficiently high proportion of instances to minimize the reliability of a single subsequent negative test, whether used for process control or as a final test of safety (table 6). These data summarize the experience of laboratory B in reprocessing single-strain pools after a positive tissue culture test. Of a total of 234 single-strain lots tested, 44 were positive on the original test. These were reheated at 37 C for an additional two to three days, after which negative tests were obtained from 21 lots. Some of the remaining lots were then subjected to a second inactivation period, resulting in negative tests for nine. Two continued to show positive tests; a third continued to be positive after three inactivation periods. The remaining 11 pools were otherwise disposed of and do not bear on the problem of inactivation.

TABLE 4.—*Positive Trivalent Pools on Initial Tests*

Laboratory	Lots No.	 % Positive
All	127	13
A	21	33
B	31	9
C	22	23
D	8	..
E	42	4

That repeat testing favors the occurrence of negative tests by chance, even if reinactivation is ineffective, is indicated by the data in table 7. Here, 32 polyvalent pools are examined in relation to their history. Twenty-three were negative in the initial test of their single-strain ools, as well as in the trivalent pools. The remaining e polyvalent pools contained at least one positive gle-strain pool that had been combined into a trivalent pool after reinactivation. Three of these nine showed a positive tissue culture safety test in the trivalent pool.

In summary, the plant data show departures from the theoretical data, as well as a lack of discrimination in the previous safety testing practices. There are exceptions to certain of these criticisms, but these need not be discussed here, since the examination of the data has been aimed primarily at finding weaknesses in the process, some of which were found in each laboratory.

TABLE 5.—*Relation of Tissue Culture Results in Single Strain Pools and Polyvalent Pools When Tests Are Done Independently*—Laboratory C*

		Polyvalent Pools Negative	 Positive	 Total
Single Strain Pools	Negative	12	3	15
	Positive	5	2	7
	Total	17	5	22

* Single strain pools were combined into polyvalent pools before results of tissue culture tests on individual pools were known. The tests are, therefore, independent, offering an experiment of opportunity on the chance nature of results apparently obtained. Of 10 lots with positive results obtained by tissue culture in either single strain pools or in the polyvalent pools, only 2 showed positive results both before and after pooling.

FORMULATION OF NEW STANDARDS

As a result of the foregoing considerations, it has been possible to develop definitive modifications of the safety requirements controlling the manufacture of poliomyelitis vaccine. 1. Single-strain pools are to be inactivated in 1:4,000 formaldehyde at 37 C, for such a period of time as will permit the obtaining of two consecutive negative tissue culture tests separated by a three-day interval prior to the termination of inactivation. In order to assure the exclusion of live virus particulates above a minimal concentration, the volume of single-strain pool material used for each safety test must not be less than 500 ml. In application, this means a negative tissue culture test on the sixth to ninth day from the beginning of inactivation and a second negative tissue culture test three days thereafter. Observations during the early part of the inactivation process can be limited to the demonstration that the process is proceeding as usual, and no dependence need be placed on the precise rate of initial fall in the concentration of live virus. 2. Once having obtained a positive tissue culture test after the initial inactivation period, only one additional inactivation period is permitted. During this retreatment, two negative tissue culture tests must be obtained on a volume of not less than 500 ml. each, separated by three days. 3. The trivalent pool is to be considered suitable for vaccine manufacture if a negative tissue culture test is obtained, utilizing 1,500 ml. of the pool in the tissue culture test. 4. Industrial practices relative to stirring for purposes of processing and sampling, as well as to temperature and pH control, must be such as to produce consistent inactivation. 5. Finally, breaks in manufacturing routine are excluded through a test for live virus in final contai material.

TABLE 6.—*Reinactivation History of a Number of Single Strain Pools—Laboratory B*

Single Strain Lots Tested	No.
Total	234
Negative on original test	190
Positive on original test	44
Reinactivated once with negative test	21
Reinactivated, positive test; second reinactivation with negative test	9
Reinactivated, positive test; second reinactivation with positive test; rejected	2
Three reinactivations, each followed by positive test	1
Reinactivation started, but test incomplete	7
Accepted on repeat testing of same sample without reactivation	4

The application of the above recommendations to production of poliomyelitis vaccine should result i product essentially free of live virus. With negative sults at the recommended test volumes in two conse tive tests during initial inactivation, or following a sir reinactivation period for each single-strain pool, with a third negative on the trivalent pool, final v cine should contain 5 or more tissue culture infect units per liter less than once in 100,000 times. Ad tional operational refinements can also be added the routine production of the vaccine, which should sult in further improvements in product, lessening costs, and no loss of safety. These suggestions, wh have been discussed with the manufacturers at leng include: the substitution of less virulent type 1 stra for the Mahoney strain, control tests to document sensitivity of the tissue culture for virus particulat concentration of the viral suspension before applying safety tests, the conduct of the safety tests themselv and modification of physical arrangements during pr essing.

EPIDEMIOLOGICAL EXPERIENCE, APRIL TO JUNE, 1955

When, on April 25, the first report was received of a case suspected to be poliomyelitis in a vaccinated child, a medical officer from the Communicable Disease Center of the Public Health Service was dispatched to participate in an epidemiological study of the case. During the 1954 field trial, personnel of the Center's Epidemic Intelligence Service had participated in the study of illnesses occurring in both vaccinated and control groups, under the direction of Dr. Francis. In anticipation of the need for epidemiological studies of poliomyelitis in the 1955 program, the Public Health Service, prior to April 12, had planned a small surveillance program to assist state health departments in the follow-up of cases. On April 28, this program was established as a Poliomyelitis Surveillance Unit on an expanded scale, with instructions to devote full time to the rapid identification of cases of paralytic poliomyelitis in vaccinated children and to conduct thorough epidemiological studies of each case. This nationwide epidemiological investigation of poliomyelitis cases associated with vaccination will continue in operation throughout 1955. It is made possible by the collaboration of state and local health officials, private physicians, and the directors of numerous public and private laboratories, with the field and headquarters staff of the Public Health Service. The data that follow are derived from the daily reports of the Poliomyelitis Surveillance Unit through May 31, 1955. This information has been an important factor in guiding our decisions and actions with respect to the vaccination program. Since many cases are still under investigation, some of these figures are subject to confirmation or change.

TABLE 7.—*Relation of Tissue Culture Test Results in Single Strain and Polyvalent Pools—Laboratory B*

		Polyvalent Pools		
		Negative	Positive	Total
Single Strain Pools	Negative	23	..	23
	Positive, then after re-inactivation, negative.	6	3	9
	Total	29	3	32

Poliomyelitis Associated with Vaccination.—Table 8 shows the numbers of paralytic and nonparalytic cases of poliomyelitis associated with the product of each manufacturer whose materials have been used since April 12. Attack rates, based on the approximate number of recipients of each product, are shown. A total of 114 cases, with five deaths, had been reported from April 25 through May 31, occurring among approximately 5,500,000 persons within one month after injection of poliomyelitis vaccine. Of these cases, 78 were paralytic and 36 nonparalytic. The largest number of cases and the highest attack rate occurred among approximately 409,000 recipients of vaccine produced by the Cutter Laboratories. Sixty-one per cent of all cases and 76% of the paralytic cases have occurred in Cutter vaccines, with an attack rate of 17 per 100,000 in one month, as contrasted with rates of 1 per 100,000 or less in the four remaining groups. Forty-nine of the Cutter-associated cases occurred in California and Idaho. The remaining 20 cases associated with this product have developed in 15 other states throughout the country.

Among approximately 5 million persons who have received the products of four other manufacturers, 45 cases had been reported as of May 31. Twenty of these were paralytic. The 10 paralytic and 20 nonparalytic cases associated with the Eli Lilly product have occurred chiefly in southeastern and southwestern states where poliomyelitis was occurring spontaneously. The 11 Wyeth-associated cases have been reported from midwestern and eastern states. The two cases associated with Parke-Davis material were reported in Illinois, and the two Pitman-Moore-associated cases were reported in Nebraska. It must be emphasized that association does not necessarily mean a cause-and-effect relationship.

TABLE 8.—*Cases and·Attack Rates in Individuals Receiving Poliomyelitis Vaccine, with Onset April 20-May 21, 1955*

Vaccine Manufacturer	Approximate No. of Persons Receiving Vaccine	Cases			Total Attack Rates per 100,000 per Month
		Paralytic	Non-paralytic	Total	
Cutter	409,000	59	10	69	17
Lilly	2,514,000	10	20	30	1
Wyeth	776,000	7	4	11	1
Parke-Davis	1,234,000	2	0	2	1
Pitman-Moore	461,000	0	2	2	1
Totals	5,394,000	78	36	114	2

Numbers of Cases Reported and Numbers Expected.—There is general agreement that cases of poliomyelitis may be expected to occur, by coincidence, following vaccination because the vaccine will not be absolutely effective and because it will be given to some children who harbor the virus and do not have apparent poliomyelitis at the time of vaccination. Table 9 presents an attempt to determine whether cases among children vaccinated in the 1955 program have been more common than would have been expected by chance. The ages of the first-grade and second-grade children who received vaccine in the National Foundation clinics are known with sufficient accuracy to calculate the numbers of expected cases. Data supplied by the Foundation also make it possible to determine the geographical areas in which these children were vaccinated, as well as the sources of the materials injected. It is not possible, however, to compare the poliomyelitis experience of these children with the current experience of unvaccinated 6, 7, and 8-year-olds in the same geographical areas. A very high proportion of children in these age-groups have received vaccine, leaving virtually no "control" group for com-

TABLE 9.—*Reported Versus Expected Cases in Children Receiving Poliomyelitis Vaccine in National Foundation Clinics*

Vaccine Manufacturer	Approximate No. of Persons Receiving Vaccine (Foundation Clinics)	No. of Poliomyelitis Cases, from April 20-May 21	
		Reported	Expected
Cutter	309,000	35	5
Lilly	2,514,000	28	24
Wyeth	776,000	11	2
Parke-Davis	834,000	2	3
Pitman-Moore	411,000	2	2

parison. Expected numbers, therefore, have been calculated by applying the five-year (1950-1954) median attack rate in 6, 7, and 8-year-olds in the specified geographical areas to the numbers of first-grade and second-grade children vaccinated in 1955 in the corresponding areas. This is a crude measure, for the incidence of poliomyelitis varies widely and unpredictably in successive years; but it is the best tool available under present conditions. The sevenfold increase of poliomyelitis cases over expected incidence in children vaccinated with Cutter materials is statistically significant. However, the marked year-to-year variations observed in attack ratio in any given locality and the small number of cases related to the Wyeth product preclude an accurate interpretation of the data. The numbers related to the Wyeth product are too small to permit accurate interpretation. The numbers of cases reported among children who received vaccines made by Eli Lilly, Parke-Davis, and Pitman-Moore were within the range expected by chance occurrence.

Evidence Related to the Presence of Infective Virus.—The data accumulated by the Poliomyelitis Surveillance Unit support the hypothesis that the excess cases among individuals vaccinated with Cutter material resulted from the use of some lots of vaccine containing infective virus. No other cases of poliomyelitis had been reported in Idaho and in some of the California areas, and this created a suspicion that there might be active virus in some of the vaccine. This suspicion has been buttressed by data on the time intervals between inoculation and onset of paralysis; by a close correlation between the site of inoculation and the site of first paralysis; by the occurrence of poliomyelitis in household associates of vaccinated children; and by the isolation of poliomyelitis virus by one laboratory, from a lot produced by Cutter. Table 10 shows the time intervals between inoculation and onset of paralysis in 66 paralytic postvaccination cases, by source of vaccine. It shows also the comparable interval in 32 monkeys experimentally infected with poliomyelitis virus by Dr. David Bodian.[3] The time intervals in Cutter-associated cases ranged from 5 to 20 days, with a median of 9 days. In three-fourths of the cases, first paralysis occurred from 6 to 14 days following vaccination. This finding corresponds with the comparable incubation periods in monkeys infected by intramuscular injection of virus. Moreover, chronological distribution of cases after inoculation of Cutter materials is the same distribution expected in a common-source outbreak after one exposure to the infectious agent.

TABLE 10.—*Poliomyelitis Cases, by Interval Between Inoculation of Poliomyelitis Vaccine and Onset of Paralysis*

Interval, Days	No. of Cases of Poliomyelitis in Persons Inoculated with Vaccine Produced by:				Experimental Data in Monkeys *
	Cutter	Lilly	Wyeth	Parke-Davis	
5-7	8	2	0	0	3
8-10	22	4	1	0	12
11-13	8	0	1	0	9
14-16	9	1	0	1	3
17-19	2	1	1	0	3
20-25	1	1	3	0	2

* Bodian.[3]

Table 11 compares the sites of inoculation and first paralysis in postvaccination cases, by source of vaccine, with the corresponding sites in monkeys inoculated with live virus. The Cutter-associated cases show a hig degree of correlation between the site of inoculation an the site of first paralysis. In 43 of 55 such cases, or 78%, the first paralysis occurred in the same arm or leg that was injected with the vaccine. This finding is strikingly similar to the experimental evidence in monkeys. In contrast, only 1 of 10 Lilly-associated cases shows the same relationship. There are too few paralytic cases associated with Wyeth and Parke-Davis materials to warrant conclusions. A number of poliomyelitis cases have developed among parents and siblings of va children. As of May 31, 50 such cases had been reported, 36 of which were in the families of children vaccinated with Cutter materials. Eli Lilly and Wyeth materials were associated with five and nine family contac cases respectively. Forty-one of these cases were reported as paralytic, with three deaths. They are distributed among sources of vaccine as follows: Cutter 29; Lilly, 5; and Wyeth, 7. About half of the cases ha occurred in parents and half in siblings. No vaccinate children in these families had contracted paralytic polio myelitis, but about one-third of them had a minor illnes within two weeks after inoculation and prior to the of poliomyelitis in other members of the family.

TABLE 11.—*Poliomyelitis Cases in Persons Receiving Vaccine by Site of Inoculation and Site of First Paralysis*

Sites of Inoculation and First Paralysis	Poliomyelitis in Persons Inoculated with Vaccine Produced by:						Experimental Data in Monkeys*	
	Cutter		Lilly		Wyeth, No.	Parke-Davis, No.		
	No.	%	No.	%			No.	%
Same	43	78	1	10	3	1	23	72
Different	12	22	9	90	4	1	9	25
Totals	55		10		7	2	32	

* Bodian, D.: Unpublished data.

Isolation of Virus.—Type 1 poliomyelitis virus been isolated from more than 20 cases in children v cinated with Cutter materials and from 2 associated w the Wyeth product. Type 2 virus has been isolated fr one case and type 3 from another, both associated w Lilly materials. Laboratory work on postvaccinat cases is in progress, and other isolations no doubt be reported. Dr. Louis P. Gebhardt, department bacteriology, University of Utah College of Medicine an independent study, has reported the isolation of t 1 poliomyelitis virus from a vial of vaccine produced the Cutter laboratory and issued in one of the lots as ciated with paralytic cases in children vaccinated w this material. Extensive studies of all lots issued by t manufacturer are in progress at the National Institutes Health and other outside reference laboratories and ha not yet been completed. The Public Health Service fi report on the Cutter plant and vaccine will be made wh vaccine tests are completed.

"Provocation" Phenomenon.—In our investigation postvaccination cases, we have considered the hypothes that involvement of the central nervous system may b precipitated by intramuscular injection of vaccine in

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[3] Bodian, D.: Viremia in Experimental Poliomyelitis: II. Viremia and the Mechanism of the "Provoking" Effect of Injections or Trauma, Am. J. Hyg. 60:358-370 (Nov.) 1954.

dividuals already infected with poliomyelitis virus. Had this hypothesis been applicable, one would have expected the excess paralytic cases to occur in areas known to be experiencing some poliomyelitis, such as the southern states. The excess cases did not adhere to this pattern; instead they occurred unexpectedly in Idaho, where no cases other than those associated with the Cutter product were observed. Excess cases did not occur in the southern states up to May 31, where a very large number of children were vaccinated with the product of Eli Lilly, at a time when poliomyelitis was known to be present. Thus, available data do not support the "provocation" hypothesis as an explanation of excess of paralytic cases in areas where Cutter materials were used.

EPIDEMIOLOGICAL CONSIDERATIONS FOR THE FUTURE

The current shortage of poliomyelitis vaccine will undoubtedly continue for some months to come. There is no question, however, that increasing amounts will be prepared; all of the licensed firms have indicated their desire to continue production under the amended requirements. During the period of short supply, physicians can be expected to limit the use of the vaccine to children in the most susceptible age groups, and parents must be satisfied to have it so used. The decision of whether to vaccinate an individual, or to vaccinate during the period of peak incidence, or to vaccinate during local epidemics of the disease rests with the physician and health officer. State and local health officials also should give advice, based on their knowledge of the local, state, and nation-wide prevalence of poliomyelitis. The role of the Public Health Service is related to standards of purity, potency, and safety of the vaccine, to epidemiological studies of the disease, and to the issuance of recommendations on vaccination problems when appropriate. There can be no doubt that the use of the vaccine this season will prevent a high percentage of paralytic poliomyelitis cases in vaccinated children in the age groups identical with those studied in the field trial. For every vaccinated child who contracted paralytic poliomyelitis in the placebo-control areas during the 1954 field trials, three to four children in the placebo groups experienced paralysis.[4]

It must be emphasized, however, that the only substantial data on the effectiveness of the vaccine in preventing paralytic poliomyelitis are limited to children 6 to 9 years of age. Dr. Salk has presented data showing that children under age 6 developed antibodies after vaccination. The relationship between antibody development and protection against paralytic poliomyelitis is still under study. The field trial provided no data upon which to estimate the degrees of protection following vaccination of children under 6 and over 9. Although the data show substantial protection among vaccinated children in the placebo areas, they also show that the degree of protection afforded the children decreased progressively with their age. The downward trend from 9 to 6 years was striking, and the 6-year-olds received little protection. The latter observation, however, may be related to observation of too small a group.

When it becomes possible to use the vaccine in children of age groups other than 5 to 9, it is hoped that careful epidemiological studies will be made to determine the effectiveness of the vaccine in children at younger and older age levels than those who were studied in 1954. Experience with other prophylactic agents indicates that satisfactory procedures for the control of a disease evolve progressively. For example, no substantial control of diphtheria was possible until a satisfactory prophylactic for use in infants and young children had been perfected and effective methods for its application had been developed. This development occurred over a period of many years. This is not to suggest that we shall be so long in perfecting our procedures for the control of poliomyelitis. There are, however, many gaps in our knowledge of poliomyelitis vaccine application. Optimum dosage, time interval between injections, the duration of immunity after vaccination, and the possibility of combining the vaccine with other prophylactic agents and adjuvants are a few of the problems that must stay under constant study with respect to this vaccine. Current research in Dr. Salk's laboratory and many other institutions may make important contributions to the control of poliomyelitis in the next few years. Studies in virology and immunology, not directly related to the vaccine, will have an important bearing on control of the disease. Much is being learned about the mutations of viruses. Moreover, work is in progress on poliomyelitis vaccine produced by a different method of inactivation, as well as on attenuated virus vaccines. Although it is too early to evaluate these new developments in terms of clinical use, they serve to remind us of the essentially dynamic nature of medical science. The development and use of the Salk vaccine has opened the door on a new period in the control of poliomyelitis. Continuing research and observation will surely lead to further improvements and to eventual control of the disease. American medicine and public health have been capable of taking advantage of new medical discoveries in the past. There is no reason now to doubt that they will not take full advantage of the new opportunities afforded preventive medicine by the development of a poliomyelitis vaccine by Dr. Jonas Salk.

SUMMARY

It is erroneous to assume that absolute safety can be assured, but it is believed that recently amended requirements for manufacture and safety testing of poliomyelitis vaccine assure the production of potent material that is safe, as tested by present tests for active virus detection, and that the risk of such vaccine transmitting poliomyelitis is negligible. Vaccine produced by four licensed manufacturers has been used in approximately 5 million children in 1955 with no untoward results. A total of 114 cases of poliomyelitis have been reported in vaccinated individuals through May 31. Of these, 79 were associated with the product of one manufacturer, which had been used in a total of approximately 409,000 per-

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[4] Francis, T., Jr., and others: Evaluation of 1954 Field Trial of Poliomyelitis Vaccine: Summary Report, Am. J. Pub. Health 45:1-63 (May, pt. 2) 1955.

sons. The widespread use of the poliomyelitis vaccine can be expected to prevent a high percentage of paralytic poliomyelitis cases, especially in children 6 to 9 years of age, and probably in other age groups as well, when supplies become available. It is believed that children younger than 6 years, children older than 9, and adults should receive the vaccine and that studies should be made to ascertain its preventive value against paralytic poliomyelitis in these age groups. Additional experience with the vaccine in the hands of private practitioners and public health officers will lead to further improvements in the control of poliomyelitis. Final decisions on the use of the vaccine remain the responsibilities of individual physicians and health officers.

1954 POLIOMYELITIS VACCINE FIELD TRIAL

PLAN, FIELD OPERATIONS, AND FOLLOW-UP OBSERVATIONS

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Early in 1953 Salk reported that a formaldehyde (Formalin)-treated virus vaccine, prepared in his laboratory, had produced neutralizing antibodies against all three types of poliomyelitis virus in children who possessed no demonstrable circulating antibodies against these viruses before vaccination.[1] This trivalent vaccine appeared to be noninfectious; inoculation of human subjects was free of untoward reactions. Moreover, the method of inactivation with formaldehyde, developed at the University of Pittsburgh Virus Research Laboratories, appeared to provide a wide margin of safety in dissociating virus infectivity from its antigenic properties. Inactivation proceeded as a first order chemical reaction, thus permitting ready standardization and rigid control. Experiments in progress gave promise of the early development of even better antigens, capable of inducing persistently high levels of neutralizing antibodies comparable to those observed in individuals who had experienced naturally occurring infection and clinically recognized disease.

Immediately after publication of this report, a distinguished group, aware of the social as well as the scientific implications of these observations, concluded that only a meticulous and systematic extension of Dr. Salk's work could adequately determine the effectiveness of the experimental vaccine under conditions of epidemic exposure. The recommendations of this group, supported by editorial comment in THE JOURNAL,[2] were set forth in an open letter to the medical profession, signed by Dr. Thomas M. Rivers, director of the Hospital of the Rockefeller Institute for Medical Research.[3] The step-by-step plan and time table outlined in this letter provided the guide lines to which the National Foundation for Infantile Paralysis has rigidly adhered in the field trial of the vaccine. In advance of the 1953 season Salk had administered the vaccine to approximately 600 individuals, of whom 474 were children between the ages of 4 and 12. None contracted clinical poliomyelitis during the season of observation; seven were known to have been exposed to the disease through intimate contact, and three of these seven may be presumed to have been infected as a subsequent rise in circulating antibody titers was detectable.[4] Salk's observations followed closely upon other notable advances in the understanding of the pathogenesis and immunology of poliomyelitis. In 1949, Bodian, Morgan, and Howe established the existence of at least three distinct types of poliomyelitis virus.[5] Soon thereafter cooperative research in four different university laboratories confirmed these findings. This typing program, sponsored by the National Foundation, suggested that efforts to control poliomyelitis by immunologic means need be concerned only with the three varieties of the virus that had been isolated from human infections.[6]

Concurrently in 1949, Enders and his associates demonstrated that the poliomyelitis virus could be propagated in non-nervous tissue.[7] This not only supported the hypothesis that the virus might multiply elsewhere in the body before reaching the central nervous system but also offered a practical means of growing the virus in tissue culture. This provided a suitable technique for the mass production of virus necessary for large-scale manufacture of the vaccine. Then, in 1952, Horstmann[8] and Bodian[9] independently found poliomyelitis virus circulating for a brief period in the blood during the prodromal stage of disease, thus indicating a possible site for the establishment of an immunologic barrier to the paralytic sequel of infection. In the following year,

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Medical Consultant, Vaccine Division, National Foundation for Infantile Paralysis.

Read in the Panel Discussion on *Prospects for the Control of Poliomyelitis* before the Joint Meeting of the Section on Pediatrics and the Section on Preventive and Industrial Medicine and Public Health at the *104th Annual Meeting* of the *American Medical Association*, Atlantic City, June 7, 1955.

[1] Salk, J. E., and others: Studies in Human Subjects on Active Immunization Against Poliomyelitis: 1. A Preliminary Report of Experiments in Progress, J. A. M. A. **151**: 1081-1098 (March 28) 1953.

[2] Research on a Vaccine for the Prevention of *Poliomyelitis*, editorial, J. A. M. A. **151**: 1198 (April 4) 1953.

[3] Rivers, T. M.: Vaccine for Poliomyelitis, correspondence, J. A. M. A. **151**: 1224 (April 4) 1953.

[4] Salk, J. E.: Recent Studies on Immunization Against Poliomyelitis, Pediatrics **12**: 471-482 (Nov.) 1953.

[5] Bodian, D.; Morgan, I. M., and Howe, H. A.: *Differentiation of* Types of *Poliomyelitis* Viruses: III. The Grouping of 14 Strains into 3 Basic Immunological Types, Am. J. Hyg. **49**: 234-245 (March) 1949.

[6] Committee on Typing of the *National Foundation* for Infantile Paralysis: Immunologic Classification of Poliomyelitis Viruses, Am. J. Hyg. **54**: 191-274 (Sept.) 1951.

[7] Enders, J. F.; Weller, T. H., and Robbins, F. C.: Cultivation of the Lansing Strain of Poliomyelitis Virus in Cultures of Various Human Embryonic Tissues, Science **109**: 85-87 (Jan. 28) 1949.

[8] Horstmann, D. M.: Poliomyelitis Virus in Blood of Orally Infected Monkeys and Chimpanzees, Proc. Soc. Exper. Biol. & Med. **79**: 417-419 (March) 1952.

[9] Bodian, D.: Reconsideration of the Pathogenesis of Poliomyelitis, Am. J. Hyg. **55**: 414-438 (May) 1952; Bodian, D.: Experimental Studies on Passive Immunization Against Poliomyelitis: II. The Prophylactic Effect of Human Gamma Globulin on Paralytic Poliomyelitis in *Cynomolgus* Monkeys After Virus Feeding, Am. J. Hyg. **56**: 78-89 (July) 1952.

Hammon established that poliomyelitis antibodies, passively transferred to human subjects by means of gamma globulin inoculations, temporarily enhanced protection against the paralytic form of the disease.[10]

These fruitful explorations led medical authorities serving on National Foundation advisory committees to recommend, in the fall of 1953, that an extensive field trial of the vaccine developed by Dr. Salk be conducted. In the past, other vaccine and immunizing agents had been introduced into general use on less substantial evidence of their effectiveness. Some, even after years of popular acceptance, have failed to demonstrate measurable evidence of efficacy. Others, through trial and error and the expenditure of considerable time, effort, and money had been modified and improved and had gradually established their usefulness in the prevention of acute communicable disease. It was assumed that with the resources of the National Foundation and with the widespread public concern for those afflicted with poliomyelitis a field trial applying modern methods of clinical, immunologic, and epidemiological study could with unprecedented speed establish answers to many unanswered questions. Could the vaccine prepared in the research laboratory be reproduced consistently and uniformly by commercial manufacturers? Would neutralizing antibodies induced by the vaccine protect susceptible individuals against the paralytic forms of the disease under natural conditions of exposure? Would mass use be attended by untoward reactions comparable to the dangers of the disease itself? If such a vaccine was protective, would the immunity artificially induced be complete or partial? Would the strains of virus used in this vaccine induce protection against all strains responsible for the naturally occurring disease? Are the comparatively few individuals who develop paralytic poliomyelitis through natural exposure those who do not respond readily to artificial immunization?

Many additional questions were raised, but it was apparent that none could be conclusively answered without crucial studies conducted on a scale sufficient to obtain statistically valid evidence. Some questions, concerning, for example, the duration of protection, would require long-term study. Most questions, however, seemed capable of answer within a one-year undertaking. The following objectives were therefore established for the field trial: (1) to determine whether a formaldehyde-inactivated trivalent poliomyelitis vaccine would offer protection against naturally occurring paralytic poliomyelitis to a selected group of children during the poliomyelitis season next following vaccination, and if protection is provided, the degree of such protection; (2) to determine what, if any, levels of actively induced antibodies are associated with subsequent resistance to paralytic disease; and (3) to observe the nature and incidence of untoward reactions to the vaccine. In mid-November, 1953, the National Foundation announced that the field trial would be initiated prior to the 1954 poliomyelitis season. The program, under the over-all supervision of Dr. Hart E. Van Riper, medical director of the National Foundation, was to be guided by advisory groups drawn from the National Foundation's own committees on research and professional education and by other committees designated by the Association of State and Territorial Health Officers.

Three phases were established for the field trial. The first concerned the planning of the entire operation and included the preparation, by cooperating manufacturers of biological products, of the large amount of vaccine that was needed. This phase began to accelerate in the summer of 1953 and continued beyond the actual start of inoculations in the field in late April, 1954. The Connaught Laboratories of the University of Toronto, Toronto, Canada, was enlisted to develop mass-production methods for the cultivation of virus in high concentrations by using monkey kidney tissue culture techniques. A group of American manufacturers, with extensive experience in the preparation of vaccines, were then recruited to undertake inactivation of the virus and actual production of the vaccine. Five such manufacturers agreed to participate on a nonprofit basis in this phase of the program. Two—Parke, Davis & Company of Detroit and Eli Lilly & Company of Indianapolis—succeeded in overcoming the many production problems and in meeting the rigid safety requirements in time to permit the use of their vaccine in the actual inoculation phase of the field trial.

The second or operational phase of the field trial gained momentum in the early fall of 1953 and reached a maximum of intensity in late April, May, and June, 1954, when inoculations were given. Technically speaking, the third or evaluation phase might be considered as beginning with the submission of completed reports to the evaluation center. However, no sharp line can be drawn between field operations and evaluation. Initially, the National Foundation itself supervised and coordinated field activities but even as the test materials—vaccine and placebo—were being administered to children in the schools, Dr. Thomas Francis Jr., and his group at the poliomyelitis vaccine evaluation center at the University of Michigan, Ann Arbor, assumed responsibility for supervision of the follow-up of those taking part in the trial and for collection and collation of case reports and other data essential to the preparation of the evaluation report.

Dr. Francis has previously presented summary findings of his evaluation study.[11] The decision to enlist Dr. Francis and to establish the evaluation center was predicated on the unquestioned need for an objective, independent evaluation of the vaccine. That this has been achieved is abundantly clear to all who have examined the summary report. Francis's report stands not only as a remarkable tribute to Dr. Francis and his immediate staff but also to literally thousands of practicing physicians, nurses, physical therapists, public health and school personnel, workers in collaborating laboratories, and the general public who cooperated in and contributed to its preparation.

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10. Hammon, W. M.; Coriell, L. L., and Stokes, J., Jr.: Evaluation of Red Cross Gamma Globulin as a Prophylactic Agent for Poliomyelitis, J. A. M. A. **150**: 739-760 (Oct. 25) 1952.

11. Francis, T., Jr., and others: Evaluation of 1954 Field Trial of Poliomyelitis Vaccine: Summary Report, Am. J. Pub. Health **45**: 1-63 (May, pt. 2) 1955.

DESIGN OF STUDY

From the very beginning of the field trial it was recognized that a study of considerable size would be necessary if the effectiveness of the vaccine was to be measured. As is well known, the risk of poliomyelitis attack has been extremely small as compared with many other disease entities. During the 10-year period 1943-1952 national poliomyelitis case rates averaged only 18.5 per 100,000 population. Moreover, interannual variations in incidence in the United States have ranged during the last 15 years from a low of 3.1 in 1942 to a high of 37.2 in 1952 (fig. 1). The unpredictability of epidemic poliomyelitis in any given community in any given year is also well recognized. Because of these and other known epidemiological characteristics of the disease, a decision was reached to conduct the field trial on a nationwide basis, provided the cooperation and assistance of state and local authorities and of the public could be obtained. Communities would be selected according to geographical and socioeconomic factors so as to provide a representative cross section of the United States population. It was also agreed that preference would be given to communities where the maximum number of cases might be anticipated during the study year and to those communities where health and educational resources would permit the satisfactory conduct of the trial.

Early in the planning of the field trial, sharply divergent views were expressed in the selection of a control population against which the effect of the vaccine on those inoculated would be measured. Some held that the effectiveness of the vaccine could be measured only if a control population identical in all respects except for vaccination, and matched individual for individual with those immunized, was available. To meet these requirements it would be necessary to inoculate one-half of the study population with the vaccine and the other with an inert material or one known to have no effect on the occurrence of paralytic poliomyelitis. In addition, the identity of the inoculated solutions would be masked by coded designations to be deciphered only after all observations had been completed and final analysis of results was in process. The difficulties inherent in carrying out such a placebo control study were acknowledged, but the proponents of this plan were confident that the advantages in terms of objectivity and ease of analysis far outweighed its disadvantages.

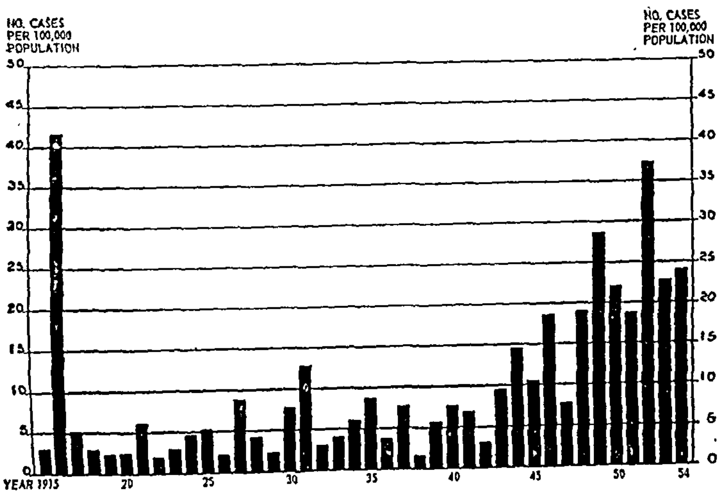

Fig. 1.—Reported poliomyelitis cases per 100,000 population in the United States, 1915-1954. The population was estimated in midyear by the Bureau of the Census. Data for 1954 were provisional. All data were taken from the U. S. Public Health Service.

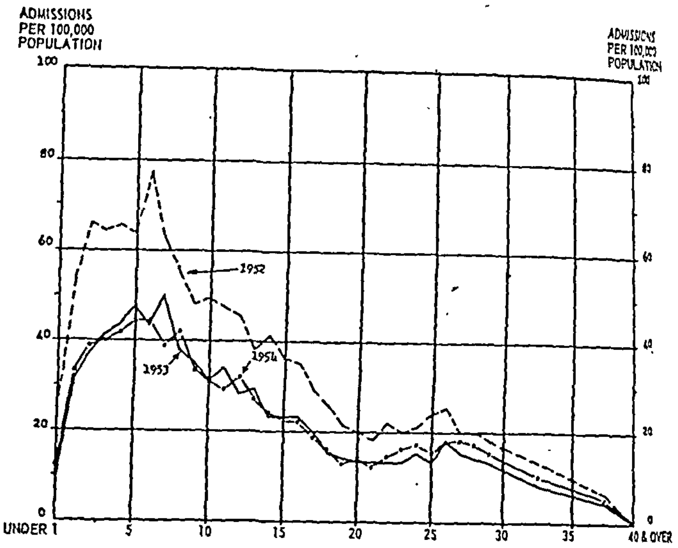

Fig. 2.—Poliomyelitis age specific acute admission rates per 100,000 population for 1952, 1953, and 1954. Population estimates are for mid-1952, mid-1953, and mid-1954. The 1952 rates are based on 35,882 notices of original acute admissions received July 20, 1952, through Jan. 31, 1953. The 1953 rates are based on 23,698 notices of original acute admissions received January through December, 1953. The 1954 rates are based on 24,950 notices of original acute admissions received January through December, 1954.

An observed control study was advanced by others as more desirable since its administration was far simpler. This plan would offer vaccine to all who volunteered to receive it. In the opinion of its proponents the effectiveness of the vaccine could be measured by comparing the incidence of paralytic poliomyelitis in those inoculated with that experienced by individuals of the same or comparable ages under similar conditions of exposure. Those proposing this plan of study discounted the likelihood of differences in attack rates arising purely as the result of selection of vaccinated and unvaccinated subjects or that unintentional bias might occur in the recording of illness in the two groups. Both plans of study were adopted; the choice of a placebo control study or an observed control study was left to the discretion of the responsible health officer of each state. Subsequent studies have indicated some of the selective factors that might affect the incidence of paralytic poliomyelitis in inoculated as opposed to observed control children.[12]

DETERMINATION OF COMPOSITION AND SIZE OF STUDY POPULATION

Since the degree of effectiveness of the vaccine was itself at test and since no reliable prediction of poliomyelitis incidence in the study population during the study period could be made, it was most imperative that the composition and size of the study group enhance the probability of statistically valid observations. On the other hand, time available for inoculations, limited supply of vaccine, and other factors exerted restrictions on the scope of the project. Although the age distribution of poliomyelitis has changed in the United

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[12] Clausen, J. A.; Seidenfeld, M. A., and Deasy, L. C.: Parent Attitudes Toward Participation of Their Children in Polio Vaccine Trials, Am. J. Pub. Health 44: 1526-1536 (Dec.) 1954. Francis,[11] pp. 13-14.

States in recent years, it remains essentially a childhood disease. Almost 75% of reported cases occur under age 20 and over 50% in children under 10. The peak ages of clinically diagnosed poliomyelitis occur in the years immediately before and after entrance into primary school (fig. 2). This fact and the accessibility of school children in organized groups for vaccination determined the selection of children enrolled in the first three grades of primary school as the study population. Enrollment in these classes roughly corresponds with the age band 6 through 9 in which, on a national basis, at least one out of five of all reported cases might be expected to occur.

In addition, it was possible, utilizing the annual incidence rates of reported poliomyelitis for the United States, to estimate, on theoretical grounds at least, the probable minimum size of the study population required to give statistically valid results. Based on such analyses, it could be anticipated that if in the field trial areas a low incidence rate of paralytic poliomyelitis was encountered and the vaccine were only 50% effective, it might be necessary to vaccinate almost 700,000 children (and observe an equal number of controls) before valid findings could be obtained. If on the other hand, the vaccine should prove 80% or more effective and an "average" poliomyelitis year occur, a high level of certainty of the results could be derived from a study of fewer than 100,000 subjects equally divided between vaccinated and controls. A conservative approach dictated that a practical goal be set for the inoculation of between 500,000 and a million children.

TABLE 1.—*Poliomyelitis Crude Case Rates, by Size of County, 1948-1952*

Population Class, Thousands	No. of Counties	1950 Total Population, Millions	Reported Poliomyelitis Cases, 1948-1952 Total	Av. Annual No.	Av. Annual Rate per 100,000
Total, all counties	3,103 *	150.7	189,072	37,814	25.1
Under 50	2,608	47.6	65,289	13,058	27.4
50 and over	493 †	103.1	123,783	24,757	24.0
50 but less than 200	377	35.1	46,033	9.207	26.2
200 and over	116 †	67.9	77,750	15,550	22.9

* Includes 3,070 counties, 29 independent cities, the District of Columbia, and parts of Yellowstone Park in Idaho, Montana, and Wyoming.
† Includes District of Columbia, Baltimore, and St. Louis; excludes the cities of Norfolk and Richmond, Va.

SELECTION OF FIELD TRIAL AREAS

Earlier studies [13] cast doubt upon the possibility of selecting specific areas that might be expected to experience epidemic conditions during the field trial. On the other hand, the observations of Benjamin and Logan in England and Wales [14] offered encouragement that a group of areas with high prevalence in the past might yield higher-than-average attack rates in a subsequent year. In a report awaiting publication Stickle [15] confirmed these findings in studying poliomyelitis incidence in the more than 3,100 counties in the United States. Summarizing Stickle's findings, it became apparent that counties with a population of 50,000 to 200,000 experienced a significantly higher average annual attack rate than those with a population of over 200,000. Interestingly and consistently the recorded incidence of reported poliomyelitis is highest in counties with populations under 50,000 and yet, in general, it was necessary to omit these smaller jurisdictions from further consideration (table 1). Public health and medical resources requisite for the trial were less readily available in the smaller areas. Further analyses indicated that intercounty variability in case rates was more than three times that of year-to-year variance within counties and that counties with the highest average attack rates have, in the aggregate, a substantially higher than average attack rate one and two years later.

On the basis of such analyses, it seemed justified to recommend the participation of those counties of 50,000 to 200,000 population reporting the highest average attack rates during the five year interval 1948-1952, the latest period for which data were available. This preliminary method of selection did not exclude some larger and some smaller counties where it seemed both desirable and feasible to include such areas. In the extensive discussions that followed, several supplementary criteria for selection were developed. For example, preference was given to areas with well-organized health services capable of conducting effectively the operational and follow-up phases of the field trial, and where the interest and cooperation of local health and school authorities and the willingness of parents to request participation of their children in the test were overtly manifest. One additional criterion was important in the final selection of field trial communities. Areas experiencing significant outbreaks before the start of inoculations were to be excluded. This was considered desirable in order to avoid, as far as possible, any fortuitous association of inoculations with the onset of cases.

The final result of these considerations was the joint selection by the National Foundation and state health officers of 217 areas in 44 states. Placebo control studies were conducted in 91 areas in 11 states and observed control studies in 126 areas in 33 states. Before inoculations were begun in late April, 1954, the number of areas expected to participate was somewhat larger. However, Maryland, Arizona, and the District of Columbia withdrew because of inability to complete the inoculation program prior to the closing of schools. All three field trial areas in Georgia were excluded at the last moment because of the occurrence of cases of paralytic poliomyelitis in the period immediately preceding inoculations. Minnesota authorities failed to sanction the program within that state in time to permit the necessary preparations. Because of interest in the program outside of the United States and the desire to add as many trial areas as time and materials would permit, 46 areas in three Canadian provinces—Alberta, Manitoba, and Nova Scotia—took part in the trial; two small areas in Finland also were included. In 1954, the areas included in the field trial in the United States experienced a reported case rate of 28.9 per 100,000 population, which was 26% higher than the rate in nontrial areas. Thus the criteria for the selection of participating trial areas actually fulfilled expectations in maximizing the number of cases in the test population.

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[13] Gilliam, A. G.; Hemphill, F. M., and Gerende, J. H.: Poliomyelitis Epidemic Recurrence in the Counties of the United States, 1932-1946, Pub. Health Rep. 64: 1584-1595 (Dec. 9) 1949.

[14] Benjamin, B., and Logan, W. P. D.: Geographical and Social Variations in the Incidence of Notified Poliomyelitis, Brit. J. Prev. & Social Med. 7: 131-140 (July) 1953.

[15] Stickle, G.: Statistical Criteria for the Selection of Poliomyelitis Vaccine Field Trial Areas, to be published.

ORGANIZATION AND ADMINISTRATION OF FIELD ACTIVITIES

It was apparent from the outset that large numbers of individuals with varying professional skills and other competences were needed if the test was to be successful. The majority of these individuals were volunteers recruited in the local field trial areas. It is estimated that more than 300,000 persons — including physicians, nurses, school teachers, public health and school officials, and community volunteers recruited by National Foundation chapters and by other civic, fraternal, or service organizations—cooperated in this extraordinary medical undertaking. Glasser has already summarized an able manner how volunteers were recruited and ectively utilized in many of the community phases of field trial.[16] Organization in each community centered around the schools where children who were to take part in the field trial were enrolled. Classroom teachers and volunteers shared in the school room census and registration of the study population, in the handling of parental request forms, in the basic education and preparation of children and parents for the test, and in the guidance of children to and from the vaccination clinics. For the most part, inoculation of children took place in school clinics; however, where the number in a given school was small, or where it was otherwise advantageous to do so, larger and centralized clinics were held elsewhere in the community. Coordination of activities in the schools was channeled through the school principal to the local health officer. In the absence of a local health officer, a qualified practicing physician served as the director of the local field trial program. It was the responsibility of the local director to enlist local interest and support for the program, to recruit the necessary physicians and other professional staff, and, with the aid of volunteers supplied by the local chapter of the National Foundation, to attend to the infinite number of etails required by the program.

Within each state, the state health officer assumed over-all responsibility for the program. Participation in the field trial was, in general, predicated upon his prior consultation with state educational authorities, the state medical society, and such local groups in the prospective field trial areas as might be indicated. The state office staffs of the National Foundation and its regional representatives were placed at the disposal of state health departments to assist them in the many specialized tasks required. Though freedom to adapt the program to established local practices was permitted, each state agreed that uniformity of procedures and forms would be maintained, the publicity regarding results of the vaccination study would not be made independently, and that analysis of the data collected would be left exclusively to the evaluation center. There was universal understanding at all operational levels that publication of the results of the trial would be made only by the evaluation center when, in the opinion of Dr. Francis and his advisors, such would be justified.

Within the National Foundation itself, only a small coordinating staff was assembled, for the most part drawn from the various operating departments of the headquarters office. Under the direction of Dr. Van Riper, this group served as staff for the various advisory committees and provided liaison with the laboratories and manufacturers engaged in the preparation of the vaccine. In addition, it collected and analyzed essential statistical data, assisted state health departments in the selection and preparation of communities for field operations, and prepared educational and instructional materials and record forms for use in the field. Other departments of the National Foundation, particularly those dealing with its 3,100 local chapters and with public relations, were also intimately involved in the program. A major function of the National Foundation was to develop the interest and support of professional groups in the health and education fields and of civic, fraternal, and service clubs.

STANDARDIZATION OF PROCEDURES

So that each state and community taking part in the field trial would complete each step in a standardized manner, a Manual of Suggested Procedures was prepared.[17] Addressed primarily to the local health officer, the manual outlined the basic principles and policies of the field trial, defined functions and responsibilities of those participating in it and explained the procedures to be followed in each community. In addition, it described the record forms, educational materials, and supplies to be furnished by the National Foundation to each community. Supplements to the manual, in the form of operational memorandums, were also prepared so that physicians in charge of vaccination clinics, school principals, classroom teachers, clinic recorders, and others would have available to them relatively brief check lists of their tasks and assignments. As vaccinations proceeded, Dr. Francis issued a series of memorandums specifying the manner in which all records were to be handled. These memorandums also outlined the steps to be followed in the identification, study, reporting, and follow-up of each illness occurring in members of the study population, whether in a vaccinated child or not. A regular channel of communication was maintained between the evaluation center and the responsible health officers in each field trial area. Special effort was made to acquaint those th administrative responsibilities in the study areas :h need for completeness, accuracy, and uniformity of records that were to be forwarded to the evaluation nter and ultimately provide the data essential to an jective appraisal of the vaccine.

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[16] Glasser, M.: M Day for Polio, Adult Leadership 3:5-7 (Sept.) 1954.

[17] Manual of Suggested Procedures for the Conduct of the Vaccine Field Trial in 1954, New York, National Foundation for Infantile Paralysis (March) 1954.

RECORD KEEPING AND IDENTIFICATION OF THE STUDY POPULATION

All children enrolled in the first, second, and third ades of public, private, and parochial schools in the 7 field trial areas comprised the study population. ıly by enumerating all members of this study populaın was it possible to determine accurately whether an dividual experiencing poliomyelitis during the period investigation belonged in the vaccinated or control oups and to calculate attack rates for the different tegories of the study population. This basic enumeraın was accomplished by use of registration schedules orm FT-3) that were completed for each of the three ades in every participating school. Each sheet and ıe was numbered uniquely, permitting permanent idenication of each child by name, address, school, grade ıte of birth, sex, race, previous history of poliomyelitis, ıd presence or absence of muscular disability. These hedules were completed in the early preparatory phase : the trial; subsequent entry of additional information ertaining to inoculation and the collection of serologic ecimens was made on the registration schedules. Parcipation in the field trial was voluntary; no child reived inoculation, vaccine or placebo (solution 199), ıless a parent so requested in writing. Permission was so sought for the collection of blood specimens for ntibody determinations, if needed. The parents of each ıild in the study population received a printed parental :quest form (forms FT-1 and FT-2) through which ıey might request participation of their child in the eld trial. Return of a signed form was no guarantee that ıe child would be inoculated with the vaccine. A surrisingly high proportion of parents, over 50%, asked ıat their children be included in whatever measures, ıoculations, and/or collection of blood specimens, were ecided on for them.

A vaccination record (form FT-4) was filled out for ach child who received an inoculation or from whom lood was taken. It recorded the date of each of the hree intramuscular inoculations of 1 cc. each at 0, 1, nd 5 weeks, respectively, the lot or code number of the naterial given, the name of the physician giving the inoculation, and the dates blood specimens, if any, were lrawn. Space was provided for recording any evidence of reactions. If the series of inoculations was not completed, the reason was stated. Information on the vaccination record was transcribed to the registration schedule, thereby permitting a check for accuracy and inconsistencies. Registration schedules and vaccination ecords were prepared in triplicate. They were edited ocally and the first two copies sent to the state health department. Then, after review, the original copies were orwarded to the evaluation center for processing.

Collection of Blood Specimens.—Two other elements of the early field operations deserve mention. One involved the collection of blood specimens for neutralizing antibody determinations and the other the observation of vaccinated children and suitable controls for the occurrence of any untoward reactions that might be associated with the vaccine. The field trial offered an unusual opportunity to extend the earlier and limited observations of Salk with respect to the antibody response of human beings to the vaccine. After careful consideration, it was decided that three serial samples of blood would be sought from at least 2% of both vaccinated children and controls. These samples were collected at the time of initial inoculation, two weeks after the third inoculation and again at the conclusion of the poliomyelitis season, that is, approximately six months later. Almost 42,000 samples were collected at the first bleeding, over 34,000 at the second, and approximately the same number at the third. These and the following figures vary slightly from those appearing in Dr. Francis's summary report.[11] The data presented here are based upon preliminary tabulations submitted from the field to the National Foundation by state health officers; the records utilized and reported by Dr. Francis were subject to extensive editing and retabulation after the original records were submitted to the evaluation center.

At the time this plan was developed, only a few laboratories were in a position to undertake studies on the scale projected and only a small number had had experience in the extensive serologic tests contemplated. Nevertheless, 28 laboratories widely distributed geographically were recruited in a brief period of time to handle this vital phase of the investigation. In addition these laboratories participated in the equally important task of serologic study of and virus isolation from cases occurring in the study population.

Observation of Untoward Reactions.—An analysis of the incidence and nature of reactions associated with the vaccine was an integral part of the field trial. Between May 16, 1953, and March 9, 1954, Dr. Salk had inoculated 5,320 individuals with vaccine prepared in his own laboratory without causing any recognizable untoward effects upon the recipients, many of whom had received several inoculations. In addition, in the period immediately preceding the field trial, Dr. Salk had administered the commercially produced vaccine to be utilized in the field trial to 7,507 children. Of these, 3,097 had been observed for more than 21 days and 3,443 had been inoculated with vaccine at an earlier date. Again, no reactions were encountered with the single exception of transient urticaria in a child reported to be sensitive to penicillin. Some concern, however, was expressed lest nephrotoxic reactions, associated with the minute quantities of kidney tissue protein present in the vaccine, or Rh sensitization related to the inoculation of material containing minute quantities of monkey kidney, might represent genuine dangers to the mass use of the vaccine. Kumm[18] has summarized the careful investigations of such possible reactions that preceded the initiation of the field trial. Additional study of these and other possible untoward effects during the field trial was approached in several ways. The vaccination record made provision for the recording of reactions, and the manual of suggested procedures emphasized the need to record any untoward effects that appeared related to or coincidental with the administration of the vaccine. Specific instructions from the evaluation center requested notification by phone of any circumstances of significant severity that might be related to inoculations. In addition, special studies of absenteeism in schools and their causes were undertaken, and further laboratory and clinical investigations of the identifiable elements contained in the vaccine were carried out.

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[18] Kumm, H. W.: The Present Status of Vaccines for the Prophylaxis of Poliomyelitis, Illinois M. J. 106: 13-19 (July) 1954.

FIELD OPERATIONS

Initially, the time table established anticipated that inoculations in the field would begin in early February and continue through May, with the program starting in southern states, where the seasonal rise is usually first to appear, and proceeding northward. It was clearly understood, however, that inoculations would not begin until (1) there were assurances that sufficient vaccine would be available to permit a reasonable measurement of its effectiveness, (2) safety and sterility tests of a predetermined and exhaustive nature had been carried out independently on each lot of vaccine by three laboratories—by the manufacturers, by Dr. Salk, and by the Laboratory of Biologics Control of the National Institutes of Health, and (3) Dr. Salk had extended his preliminary pilot study to a minimum of 5,000 human subjects. In addition, the antigenicity of each lot of vaccine produced by manufacturers for use in the field trial would be titrated by Dr. Salk against the response he had obtained with material produced in his own laboratory.

These rigid though essential prerequisites, established by the vaccine advisory committee of the National Foundation, were met on April 25, 1954. This committee then recommended that the nationwide field trial proceed.[19] At that time the U. S. Public Health Service made the following statement: "We believe that the judgment of the Vaccine Advisory Committee is sound and that the National Foundation for Infantile Paralysis is justified in proceeding according to the Committee's recommendations." So that the medical profession would be kept fully informed concerning the background of the field trial and developments as they occurred, periodic releases were prepared for publication in national, state, and local medical journals. Shortly before the actual start of inoculations, each practicing physician in the country received through the mail a special preprint of an article on vaccination against poliomyelitis prepared by Dr. Van Riper.[20]

TABLE 2.—*Preliminary Tabulation of Field Trial Study Population*

Study Areas, by Type of Control	Enrollment, Grades 1-3	No. Signed Parental Requests Received	Inoculations				Bleedings Completed		
			1st	2nd	3rd	3rd/1st, %	1st	2nd	3rd
All reporting areas (265)	1,905,124	977,286	700,742	686,478	672,443	96.0	41,924	34,120	33,772
Placebo control areas (139)	823,424	477,036	467,980	456,895	449,793	96.1	16,154	13,879	13,423
Observed control areas (126)	1,081,700	500,250	232,762	229,583	222,650	95.7	25,770	20,241	20,349
U. S. reporting areas (217)	1,831,702	947,005	653,793	640,668	629,063	96.2	40,273	32,818	33,193
U. S. placebo control areas (91)	750,002	446,755	421,031	411,085	406,413	96.5	14,503	12,577	12,844
U. S. observed control areas (126)	1,081,700	500,250	232,762	229,583	222,650	95.7	25,770	20,241	20,349
Canada and Finland reporting areas (48) (all placebo)	73,422	30,281	46,949	45,810	43,380	92.4	1,651	1,302	579

On April 26, 1954, the first series of inoculations were begun. Altogether, 653,793 individuals in a study population of 1,831,702 children in the United States received first inoculations. One week later 640,668 children began receiving their second inoculations, and five weeks later, 629,063 or over 96% who had received their first began to receive their third inoculations. Because of different starting dates in many of the field trial areas, the administration of vaccine and the collection of the first two blood samples in the 217 field trial areas in the United States continued to about mid-June. Because of later starting dates, this phase of the program continued in Canada and Finland somewhat longer (table 2). In placebo control areas the study required the giving of three matched inoculations of coded material over a period of five weeks to children in the first three grades of school. In fewer than 0.2% of the 421,031 children inoculated did a child receive a mixed series of vaccine and placebo. In observed control areas inoculations were given only to children in the second grade, and 232,762 were given vaccine in this segment of the study population. The negligible amount of confusion and recording errors observed during the inoculation phase can be attributed to the diligence of all those concerned with the field trial and to the supervision given by the evaluation center. During the vaccination period April 26 to June 15, personal visits were made by evaluation center staff to 32 of the 44 participating states.

OBSERVATIONAL PHASE AND FOLLOW-UP PROCEDURES

A crucial element in the field trial was, of course, to determine the occurrence of poliomyelitis in members of the study population. This required the identification of all possible cases; the establishment of correct diagnosis by clinical, epidemiological, and laboratory study; accurate and complete recording of all relevant data in a systematic manner; and the transmission of all required information to the evaluation center at Ann Arbor. The primary responsibility for this fell on practicing physicians in local communities, particularly in the field trial areas, but in other localities as well. Local health officers and, in many states, the staff of the state health departments played an equally vital role in arranging for or actually participating in each of the steps

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19. Poliomyelitis Vaccine Types 1, 2, and 3: Recommendations of Vaccine Advisory Committee of National Foundation for Infantile Paralysis and Statement of United States Public Health Service, New York, National Foundation for Infantile Paralysis (April) 1954.

20. Van Riper, H. E.: Vaccination Against Poliomyelitis, GP 9:59-62 (April) 1954.

essential to the identification, reporting, and investigation of cases. To reduce the need for discrimination locally and to encourage completeness of reporting and uniformity of procedure, a simple plan was devised by the evaluation center. All illnesses arising in any child enrolled in the first, second, or third grade in the spring term in schools located in the field trial areas, whether the child was inoculated or not, were to be investigated. Every case—paralytic, nonparalytic, suspected, or doubtful—was to be reported to the evaluation center and subjected to the same degree of study.

The lucid description given in Dr. Francis' summary report of the record forms, systematic checks and counterchecks, the use of diagnostic consultants and specially trained physical therapists for muscle grading examinations, and the availability of laboratory services and other follow-up procedures makes it unnecessary to review in detail at this time each of the precise steps taken in this phase of the field trial. It is now apparent that the information on 1,103 cases sent to the vaccine evaluation center from May 1 to Dec. 31, 1954, represented as complete a record of poliomyelitis experience in the field trial population during the study period as human ingenuity and competence could devise.

SUMMARY

That an extensive field trial of a poliomyelitis vaccine has been conducted by the National Foundation and many cooperating individuals and agencies has been widely publicized. It is almost universally known that this basically medical test—unprecedented in its objectives, its magnitude, and its scope—has been highly successful, and there is now available to the public a safe and simple measure offering 60 to 90% protection against paralytic poliomyelitis. A few days after the announcement of the results of Dr. Francis's evaluation in Ann Arbor, Mich., on April 12, 1955, a Gallup poll indicated that 96% of all people interviewed in the national sample and 98% of all people with children under the age of 15 had heard about the vaccine. The report indicated that more people knew about the vaccine than had known of almost any news event on which a public opinion poll had ever been taken.[21]

What has been less readily recognized is the step-by-step and painstaking labor that has made our present confidence of mastery over this disease possible. For more than 50 years scientists throughout the world have slowly accumulated better understanding of each of the many phases of this disease, its clinical and epidemiological characteristics, its etiology, its pathogenesis, and its immunologic manifestations. The seemingly disparate elements of a highly complex mosaic began to fit together into recognizable form only when a coordinated attack on poliomyelitis, sponsored primarily by the National Foundation for Infantile Paralysis was launched 17 years ago. Since 1948, the progress achieved by this frontal attack has been rapid and dramatic, and it can be suggested that the preliminary planning for the crucial experiment comprising the 1954 vaccine field trial actually goes back that far. It has been stated by competent authority that the uniqueness of a safe, potent, and effective poliomyelitis vaccine, available for widespread use, is in large measure inherent in the circumstances surrounding it rather than in the preparation itself. For the first time in medical history, a vaccine has been developed as a result of a publicly supported program of medical research.

Uniqueness, also, is intrinsic in the decision of the scientific advisors of the National Foundation for Infantile Paralysis to determine precisely the validity of the vaccine's protective effect. Despite the fact that the vaccine's safety and ability to stimulate the production of specific antibodies had already been established by extensive laboratory, animal, and human being tests, the decision was made to establish its protective effects in a statistically significant group of children under natural conditions of exposure before it was made generally available to the medical profession and to the public. It is possible to reflect now how sound this decision was. Also, unprecedented in medical and scientific history has been the demonstration that literally hundreds of thousands of volunteers—physicians, nurses, physical therapists, laboratory workers, public health and school personnel, and the general public—can be effectively mobilized in a truly scientific endeavor. This achievement required an unusual degree of foresight and imagination, meticulous and deliberate planning and organization at each stage of development of the program, and, finally, the unfaltering confidence of the American public who have made the National Foundation for Infantile Paralysis and its program possible. In the last analysis the field trial has not been an end in itself; it is merely another step, though a great one, in the advance of human understanding of and control over paralytic poliomyelitis.

120 Broadway (5).

[21] American Institute of Public Opinion: Personal communication to the author.

Accidental Death from Electric Current.—The death rate from accidents involving electric current has decreased over the years. At present, such accidents take about 1,000 lives annually in the United States, or 7 per million population, whereas a quarter century ago the corresponding death rate was 9 per million. Fatalities due to electric current show a distinct seasonal pattern, beginning to increase in the spring and reaching a peak in the summer; more than two fifths of the deaths each year occur in June, July, and August. The higher mortality in summer results largely from increased activity in the repair and extension of electric lines and from the generally greater amount of outdoor work which brings men in accidental contact with electric lines. Moreover, when the body is wet with perspiration, as is often the case in warm weather, its resistance to electric shock is lowered. About 95% of the fatal accidents caused by electric current in the United States occur among males, reflecting largely the effect of occupational hazards. It is not surprising, therefore, that the victims are concentrated principally in the main working ages of life. . . . Somewhat over one fifth of all the males killed by electric current in 1951-1952 sustained their injuries on industrial premises—electric light and power plants, factories, workshops, and similar places. . . . Hazards on the farm have been responsible for an appreciable loss of life from electric shock; the toll was 181 (177 of them males) in 1951-1952. For the most part these fatal accidents involved farm production equipment, such as irrigation pumps, machinery, and electric fences. . . . Accidents in the home accounted for one sixth of the deaths due to electric current among males and for about four fifths of those among females in 1951-1952.—Accidental Death from Electric Current, *Statistical Bulletin Metropolitan Life Insurance Company*, May, 1955.

EVALUATION OF THE 1954 POLIOMYELITIS VACCINE FIELD TRIAL

FURTHER STUDIES OF RESULTS DETERMINING THE EFFECTIVENESS OF POLIOMYELITIS VACCINE (SALK) IN PREVENTING PARALYTIC POLIOMYELITIS

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The purpose of the poliomyelitis vaccine evaluation program in the field trial of 1954 was to seek a measure of the prophylactic effect of the preparations of vaccine to be used, the only assumptions being that the experimental background was sound and that the vaccine was to be antigenic and noninfectious. The undertaking meant the acceptance of a public and scientific trust to provide, so far as possible, an objective analysis and unprejudiced appraisal of data obtained from numerous study areas. It must be fully realized that the evaluation program was not a tightly knit operation carried on by a single group of investigators. Rather, it was a widespread series of investigations that the vaccine evaluation center at the University of Michigan sought to integrate by obtaining uniform acceptance of instructions and procedures and, thus, to maintain uniformity of understanding and performance and completeness and accuracy of investigation and report. In effect, then, the center served as the executive agency for a study dependent upon the willingness, interest, and cooperation of the local medical profession, both administrative and practicing, and of their affiliated personnel. But, in addition, there was the extended network of virus laboratories, geographically distributed, to aid in the specific diagnosis of reported cases; a large number of specially oriented physical therapists who would make detailed examinations of the muscular status of each patient in assigned study areas. Beyond this was the great background of public interest leading to their voluntary participation in an investigation that was, in the end, completely dependent upon their support.[1]

All data from all areas were transmitted to the center on forms devised for the specific step. Throughout the study period the major effort of the staff of the center was concentrated on getting the necessary information from the different agencies responsible for the actual work at the local level. All possible means were used to eliminate delays, inaccuracies, or omissions in the requisite reports, with the result that a high degree of completeness was finally attained.

STUDY PLANS

The evaluation program embraced two distinct plans. The plan originally announced by the National Foundation for Infantile Paralysis was to vaccinate all children in the second grade of school whose parents requested it, while all the children of the first and third grades were to be kept under observation as controls for the vaccinated children. The ease of carrying out vaccination under such conditions recommends the procedure, but it presents possible disadvantages in the evaluation by the ready opportunity for the introduction of bias at any stage in the diagnosis and investigation of cases. The vaccinated persons are those who specifically volunteer; the controls comprise both those who might volunteer and those who would not. The age groups do not correspond, although the first and third grades bridge the second grade in this respect. It can readily be determined whether a child was vaccinated or not, and that knowledge could influence subsequent consideration. Table 1 presents the number of participants in the "observed study areas."

TABLE 1.—*Distribution of Study Population, by Participation Status and Vaccination Status—Observed Areas*

Study Population	No.	% of 2nd Grade	% of Total Population
All grades			
Total	1,080,680	....	100.0
Requests	567,210	....	52.5
2nd grade (requests)	245,895	69.2	22.8
Complete vaccinations	221,998	62.4	20.5
Incomplete vaccinations	9,904	2.8	0.9
Absent or withdrew	13,993	3.9	1.3
1st and 3rd grades (requests)	321,315	....	29.7
All grades			
Participation not requested	332,870	....	30.8
Participation not recorded	180,600	....	16.7

In order to achieve strict impartiality in the study o patients in test and control groups, the second plan o study was introduced. It comprised all children of the first, second, and third grades whose parents requested their participation, with a clear understanding that hal would receive vaccine and the other half a placebo while knowledge of the inoculum was available only by a code held at the evaluation center. Those who received the placebo were the controls and have been shown in all respects to be counterparts of the vaccinated children (table 2). Those who did not participate were not considered additional controls. The uninoculated persons were, however, to be followed in the same manner as the participants; it was also to be true of uninoculated persons in the second grade of observed areas. This was adopted to gain uniformity of investigative procedure without consideration of vaccination status and to avoid selective problems at the local level. But it should be emphasized that those not included as participants are not an integral part of the evaluation; they are a different population. Evidence that they are different was clearly supplied in a survey of the socioeconomic status and

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Read in the Panel Discussion on Prospects for the Control of Poliomyelitis before the Joint Meeting of the Section on Pediatrics and the Section on Preventive and Industrial Medicine and Public Health at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 7, 1955.

This study was aided by a grant from the National Foundation for Infantile Paralysis, Inc.

1. Francis, T., Jr., and others: Evaluation of the 1954 Field Trials of Poliomyelitis Vaccine: Summary Report, Am. J. Pub. Health 45:1-63 (May, pt. 2) 1955.

reaction to health problems among families of the ebo study areas. Numerous studies have indicated rences in antibody development and susceptibility oliomyelitis between portions of populations of difnt socioeconomic levels, and the differences demoned in the survey indicated that the nonrequesting ılation might well be a more resistant group than inoculated.

DATA REQUIRED FOR EVALUATION

'he vaccination program was carried out between the of April and mid-June. The first problem was that ollecting and verifying the basic information on each ıe 1,829,996 children in the total study population. ıcluded a record of the lot of material given in each ulation to each child. These data were transferred to hed cards so that tables describing the population ırding to essential characteristics could be prepared. as an extensive but essential task, since it provided necessary identification of the vaccinated and conpersons in whom the incidence of poliomyelitis ld be investigated and the measurement of vaccine's fect would be made. In addition, from more than),000 children of the vaccinated and control groups ımples of serum were obtained prior to the time of inction, together with serums taken two weeks after the inics were completed and again five months later, and ere to be tested in the respective laboratories. These ecords were also established and results received at the enter. From them the distribution of antibody in this egment of the population in different parts of the counry, the response to vaccine, the persistence of effect, and ossibly information on the extent of natural exposure o poliomyelitis virus in the different areas during the tudy period as indicated by antibody changes could be letermined.

.E 2.—*Distribution of Study Population, by Participation Status and Vaccination Status—Placebo Areas*

Study Population	No.	%
otal in grades 1, 2, and 3	749,236	100.0
otal requests to participate	455,474	60.8
Complete series of injections		
Vaccine	200,745	26.8
Placebo	201,229	26.9
Incomplete injections		
Vaccine	8,484	1.1
Placebo	8,577	1.1
Absent at first clinic or withdrew	36,439	4.9
Number not requesting participation	280,868	37.5
Participation status not recorded	12,894	1.7

The second phase in the evaluation was concerned with discovery and identification of all cases of polionyelitis or suspected poliomyelitis in all children of the irst, second, and third grades in the study areas. The various steps in the investigation of a case are: (1) physician's diagnosis—report to local health department; (2) telegraphic report to vaccine evaluation center; (3) iction of local health department, including (*a*) clincoepidemiological investigation and report to vaccine evaluation center, form FT-6, (*b*) collection and shipment of laboratory specimens (or by laboratory) and notice to vaccine evaluation center, form FT-9, and (*c*) notification of physical therapist; (4) first muscle evaluation by physical therapist (10 to 20 days) and physician's interpretation of patient's status, form FT-7; (5) collection of convalescent serum for laboratory, form FT-9; (6) second muscle evaluation by physical therapist (50 to 70 days) and physician's interpretation of patient's entire illness, form FT-8; (7) report of virus isolation, tests of antibody titer, laboratory diagnosis, form FT-10; (8) establishment and application of criteria for diagnosis of individual patient; and (9) integration of all data into final vaccine evaluation center diagnosis.

The criteria for diagnosis of poliomyelitis, for designation of a case as paralytic and its severity, and for the interpretation of laboratory results were carefully drawn. In this we had the continued help of an advisory committee comprised of expert clinicians, virologists, biostatisticians, epidemiologists, and administrators. The information concerning each case was carefully reviewed and the diagnostic classification made without knowledge of its vaccination status so that objectivity was readily maintained. Inevitably, difficulties in decision were encountered when results from different pieces of data were not in agreement, but the effort was made to follow a consistent plan of interpretation.

RESULTS

The study period was defined as the period from two weeks after the time of the third injections in an area to Dec. 31, 1954. The beginning was selected because it coincided generally with the time when second blood specimens were obtained for measurement of antigenic response to vaccine. During the study period there were 1,013 cases reported to be poliomyelitis or suspected poliomyelitis; 428 in the total study population of placebo areas and 585 in the total study population of observed areas. With the criteria employed, 67.6% were classified as paralytic, 17.6% as nonparalytic, and 14.8% as not poliomyelitis or doubtful. There was no major difference in distribution of diagnoses in the two populations.

Table 3 shows the cases distributed according to the various segments of the total populations involved. It must be emphasized again that the evaluation is limited to a comparison of incidence *in the vaccinated* and in the established controls. The nonparticipating portions of the populations, that is, those who specifically refused to participate, are not additional controls. That decision was firmly established well in advance of the tabulation of results. The data are presented only because they are available and for completeness of reporting. The cases and rates per 100,000 of specific population are listed. In the placebo control areas there was a total of 82 cases reported among the 200,745 vaccinated and 162 among the 201,229 who received a placebo. The corresponding rates are 41 and 81—a ratio of 1:2; however, 25 and 20 cases, respectively, were classified as not poliomyelitis or doubtful. Thus, when the cases accepted as poliomyelitis are compared, there are 57 and 142, respectively, with rates of 28 and 71, a ratio of 1:2.5. When these are subdivided into paralytic and nonparalytic groups, no difference is observed between the incidence of nonparalytic cases among vaccinated and control persons. The sole significant difference, then, resides in the cases classified as paralytic poliomyelitis; there were 33 in the vaccinated group and 3.5 times as many, 115, in the placebo control group. In the observed control study, the number of controls is 3.3 times that of the inoculated; hence, for comparison the rates must be used. Here, again, there is no significant difference between the rates in nonparalytic cases or between the doubtful and not poliomyelitis groups in the vaccinated and control patients. The rates for paralytic cases are, however, 17 and 46 respectively —a ratio of 1:2.7.

This possibility was an essential reason for establishing the strictly controlled placebo study. Moreover, the uninoculated—or refused—portion of the second grade in observed areas also had a lower rate than the designated controls who themselves were both "yes" and "no" participants. When the incidence rates in control and uninoculated groups combined are calculated for the placebo study and for the observed study, they are the same: 43.7 and 43.9 respectively. The differences disappear.

Lack of Evidence of Provocation or Infection from Vaccination.—It had been suggested that the placebo inoculations might exert some provocative influence toward paralytic poliomyelitis. Analysis of the data reveals no evidence of exaggerated incidence or localization of paralysis associated with inoculations. Further information is presented regarding the occurrence of poliomyelitis in the total study populations during the nine-week period from the beginning of vaccination *to four* weeks after the third injections in an area. There were 129 reported cases. As seen in tables 4 and 5, *no distinctive difference* in incidence in time of occurrence of cases appears in the vaccinated, placebo, or uninoculated groups of the placebo areas, or in the corresponding groups of the observed areas. The latter included many more southern states where poliomyelitis was already being reported at the time of vaccination, especially in Texas where half of the cases occurred (tab

TABLE 3.—*Summary of Study Cases by Diagnostic Class and Vaccination Status, Rate per 100,000*

Study Group	Study Population	All Reported Cases		Poliomyelitis Cases: Total		Paralytic		Nonparalytic		Doubtful or Not Poliomyelitis	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
All areas, total	1,829,916	1,013	55	863	47	685	37	178	10	150	8
Placebo areas, total	749,236	428	57	358	48	270	36	88	12	70	9
Vaccinated	200,745	82	41	57	28	33	16	24	12	25	12
Placebo	201,229	162	81	142	71	115	57	27	13	20	10
Not inoculated *	338,778	182	54	157	46	121	36	36	11	25	7
Incomplete vaccinations	8,484	2	24	2	24	1	12	1	12	..	..
Observed areas, total	1,080,680	585	54	505	47	415	38	90	8	80	7
Vaccinated	221,998	76	34	56	25	38	17	18	8	20	9
Controls †	725,173	439	61	391	54	330	46	61	8	48	6
2nd grade not inoculated	123,605	66	53	54	44	43	35	11	9	12	10
Incomplete vaccinations	9,904	4	40	4	40	4	40	..	..	..	..

* Includes 8,577 children who received one or two injections of placebo. † 1st and 3rd grade total population.

TABLE 4.—*Study Cases with Onset up to Nine Weeks from Date of First Inoculation, by Vaccination Status*—Placebo Areas*

	Total	Poliomyelitis Virus Recovered, Type 1	2	3	Negative Isolation	Other Virus Recovered	Not Collected or Not Done	No. of Wk. from Wk. of First Inoculation to Wk. of Onset: 0	1	2	3	4	5	6	7	8	9
Vaccinates																	
Paralytic	2	..	..	..	2	..	..	..	..	..	..	..	..	1	..	1	..
Nonparalytic	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..
Not poliomyelitis or doubtful	3	..	..	..	1	..	2	..	..	..	..	..	1	1	..	1	..
Placebo																	
Paralytic	4	..	..	2	2	..	..	..	..	..	..	1	1	..	..	2	..
Nonparalytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Not poliomyelitis or doubtful	3 †	..	..	..	1	..	2	..	..	..	1	..	1	..	..	1	..
Partial vaccinates																	
Paralytic	2	1	..	..	1	..	..	..	..	1	..	1 ‡	..	..	..	..	..
Nonparalytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Not poliomyelitis or doubtful	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
All other																	
Paralytic	8	1	..	2	1	..	4	..	..	1	1	..	1	1	..	3	1
Nonparalytic	4	..	..	1	3	..	..	..	..	..	..	..	1	..	2	1	..
Not poliomyelitis or doubtful	5	..	..	..	5	..	..	..	..	..	..	..	..	4	1	..	..

* Date of first inoculation in school used for uninoculated children. † Partial placebo, one case. ‡ Doubtful facial.

The lack of effect in nonparalytic cases may indicate that they include a sizable proportion of cases that in reality are not poliomyelitis or that vaccination did not prevent infection and minor degree of illness, although limiting the development of paralytic involvement. But it must also be pointed out that, with the criteria employed, only 15 to 17% of the cases remained in the nonparalytic category. The question has been asked why the incidence of paralytic cases is less in the uninoculated members of the population than in the placebo controls. One can only repeat that the populations receiving vaccine or placebo are strictly comparable in every characteristic; they are equal parts of one population, while those who refused participation are distinctly different.

. The number of cases in the first and third grade con- ıls and in the vaccinated group is directly propor- nate to the population. The tables also contain the ults of efforts to isolate virus from the reported cases. om the four cases of paralytic poliomyelitis among ›se receiving vaccine, partial or complete series, type 1 ·us was recovered once; the others were negative. ıliomyelitis virus was recovered only once from vac- ıated persons in the observed areas, a type 2. From lf of the paralytic cases in the control group in which ›sts were done, poliomyelitis virus was isolated: eight ʼpe 1 and four type 3.

There were only two instances of poliomyelitis in asso- iates of vaccinated persons during this nine-week pe- ʼod. The study member in New York state received the ıird injection of vaccine on June 17; the sibling de- eloped nonparalytic poliomyelitis 26 days later, and 2 ays later the vaccinated child developed poliomyelitis ʼith minimal paralytic signs; no virus was recovered. In ʼexas, a child received his third injection of vaccine on une 15, and 21 days later had the onset of mild bulbar ›oliomyelitis, but no virus was recovered. The sibling ıad his onset on the same day, with nonparalytic poliomyelitis and negative virus studies. There were three instances of similar nature in the placebo group, three in the uninoculated of the placebo study areas, three in the controls, and one in the nonparticipating group of observed areas. There is, therefore, no indication of undue transmission of poliomyelitis virus from vaccinated persons in this period to other members of the household.

TABLE 5.—*Study Cases with Onset up to Nine Weeks from Date of First Inoculation, by Vaccination Status*—Observed Areas*

	Total	Poliomyelitis Virus Recovered, Type			Negative Isolation	Other Virus Recovered	Not Collected or Not Done	No. of Wk. from Wk. of First Inoculation to Wk. of Onset									
		1	2	3				0	1	2	3	4	5	6	7	8	9
'accinates																	
Paralytic	7	..	..	..	6	..	1	..	1	..	1	..	..	1	1	3	..
Nonparalytic	5	..	1	..	3	1	..	..	..	1	..	1	1	1	..	1	..
Not poliomyelitis or doubtful	6	..	..	..	4	..	2	..	..	..	2	..	..	1	2	1	..
'ontrol																	
Paralytic	35	8	..	4	12	..	11	3	3	4	2	4	3	6	1	5	4
Nonparalytic	15	..	..	1	4	..	10	2	1	..	..	4	1	2	2	3	..
Not poliomyelitis or doubtful	9	..	..	..	8	..	1	1	2	..	1	1	..	..	1	2	1
'artial vaccinates																	
Paralytic	4	..	..	..	3	..	1	..	1	..	1	..	2	..	..	..	..
Nonparalytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Not poliomyelitis or doubtful	4	..	..	..	4	..	..	1	1	..	1	1	..	..	..	..	..
ll other																	
Paralytic	5	1	..	1	2	..	1	..	1	..	..	1	..	..	3	..	..
Nonparalytic	5	..	..	..	2	..	3	1	1	..	..	1	1	..	..	1	..
Not poliomyelitis or doubtful	2	..	..	..	2	..	..	..	..	1	..	..	..	..	..	1	..

* Date of first inoculation in school used for uninoculated children.

TABLE 6.—*Study Cases with Onset up to Nine Weeks from Date of First Inoculation, by Vaccination Status*—Texas*

	Total †	Poliomyelitis Virus Recovered, Type			Negative Isolation	Not Collected or Not Done	No. of Wk. from Wk. of First Inoculation to Wk. of Onset									
		1	2	3			0	1	2	3	4	5	6	7	8	9
Vaccinates																
Paralytic	5	..	..	..	5	..	..	1	..	..	..	..	..	1	3	..
Nonparalytic	3	..	..	..	3	..	..	..	1	..	1	..	..	..	1	..
Not poliomyelitis or doubtful	2	..	..	..	2	..	..	..	..	1	..	..	..	1	..	..
Control																
Paralytic	16	5	..	2	6	3	..	1	..	2	2	2	4	1	2	2
Nonparalytic	10	..	..	..	2	8	2	1	..	..	..	1	2	1	3	..
Not poliomyelitis or doubtful	4	..	..	..	3	1	1	1	..	..	1	..	..	..	..	1
Partial vaccinates																
Paralytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nonparalytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Not poliomyelitis or doubtful	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..
All other																
Paralytic	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Nonparalytic	2	..	..	..	..	2	..	..	..	..	1	1	..	..	..	..
Not poliomyelitis or doubtful	2	..	..	..	2	..	..	..	1	..	..	..	..	..	1	..

* Date of first inoculation in school used for uninoculated children. † No viruses other than the poliomyelitis virus were recovered.

Distribution of Paralytic and Laboratory Confirmed Cases.—The subsequent analyses of case distribution were directed toward the combining of clinical and laboratory data that enhance the reliability of diagnosis. A summary of these progessive stages with accompanying estimates of effectiveness in the two types of study are given in table 7. In the placebo areas there was a distinct trend for the differences in ratio between vaccinated and controls to increase as the severity of paralytic involvement increased. In spinal paralytic cases of minimal degrees of involvement the difference was only 2:1, suggesting that here, too, cases that were not specific poliomyelitis virus infections were included in these clinical classifications. In the more severe classes, however, the distinction became quite marked, emphasizing the possibility that the vaccine exhibited its major influence in preventing significant muscular impairment. The difference in rates for bulbospinal cases was pronounced and highly significant.

The same trend occurs among spinal paralytic cases in observed areas, but the difference between total bulbospinal rates is less, apparently owing to the lack of effect in cases with minimal paralytic ratings. The limited number of cases, however, can significantly limit the degree of numerical agreement in the two studies. Analysis of paralytic cases that were designated by virus isolation, serology, or virus in family associates as specific infections with the known types of poliomyelitis virus was then undertaken. This obviously reduces again the number of cases admitted to consideration. It is seen, however, that with these criteria, the estimated effect of vaccine was the same in spinal paralytic cases of both placebo and observed study areas. However, the discrepancy between the bulbospinal cases in the two studies persists.

TABLE 7.—*Estimates of Effectiveness of Vaccine at Successive Stages of Analysis*

	Placebo Study Areas					Observed Study Areas					
	No. of Cases			% Effectiveness		No. of Cases			% Effectiveness		
Diagnostic Classification	Vaccinated	Controls	Significance Level	Estimate	Lower Limit	Vaccinated	Controls	Significance Level	Estimate	Lower Limit	Source of Data
Total cases reported *	82	162	<0.001	49	36	76	439	<0.001	44	32	Table 3
Total poliomyelitis	57	142	<0.001	60	49	56	391	<0.001	54	32	
All paralytic	33	115	<0.001	72	61	38	330	<0.001	62	51	
All nonparalytic †	24	27	NS	..	..	18	61	NS	..	..	
Paralytic-spinal	28	70	<0.001	60	39	20	199	<0.001	66	53	Tables 3a, b
Bulbospinal	2	36	<0.001	94	81	15	100	<0.001	50	19	
Laboratory confirmed											
Spinal	8	45	<0.001	82	65	7	127	<0.001	83	64	Tables 5a, b
Bulbospinal	2	23	<0.001	91	68	9	71	<0.01	60	23	
All virus positive											
Total	15	70	<0.001	80	65	20	210	<0.001	69	56	Tables 6a, b
Type 1	13	39	<0.001	68	41	14	114	<0.001	62	33	
Type 2	0	6	<0.05	100	83	2	34	<0.01	80	33	
Type 3	2	25	<0.001	92	72	4	62	<0.001	78	47	

* Because of small numbers the bulbar and fatal cases are omitted. All fatal cases occurred in controls.
† The difference in distribution of nonparalytic cases is not significant at any stage of analysis.
‡ Francis and others.[1]

Finally, the distribution was studied of all cases, paralytic and nonparalytic, from whom a specific poliomyelitis virus was isolated. In placebo areas an effectiveness of 68% was estimated against type 1, and 90% or more against types 2 and 3. In observed areas the trend was the same but lower. What, then, can be given as the effectiveness of vaccine? The calculations presented in the table appear to be valid estimates from the summarized data. Subsequent review has not revealed significant error. It is fully recognized that larger numbers would have created greater security, but the data obtained are unprejudiced appraisals. The strictly controlled placebo study provides the data in which there is greater confidence than those from the observed control study. In fact, the results from the observed areas would be more difficult to interpret if they had not followed the trend of those obtained in the placebo study. The lesser effect seen against type 1 virus is in accord with the lesser antigenic effect of a number of the preparations of vaccine measured against type 1 virus. But taking the composite results against laboratory confirmed cases of paralytic poliomyelitis an effectiveness of 80 to 90% was observed in the placebo study areas and 60 to 80% in observed study areas. It must be emphasized that the results presented apply to the circumstances in effect for the 1954 studies during which intensive efforts were made to obtain as complete and uniform data as conditions of study would permit.

There are questions arising from the data to which there is yet no ready answer. The incidence of paralyti cases in the 6-year-old group did not appear significantl different in vaccinated and controls of the placebo areas It can only be pointed out at the present that when thes cases were considered in terms of virus isolation, ther were four cases of type 1 in each group, but there wer no type 2 or type 3 cases in the vaccinated while one an five cases, respectively, occurred in the controls. Study this problem is continuing.

SUMMARY

This review has been directed to a further summar of the report of the evaluation of the 1954 field trial poliomyelitis vaccine. The data appear on further exar ination to retain their validity. Possible harmful effe of the poliomyelitis vaccine were not indicated by data. Again, the definition of controls and the value strictly controlled studies is emphasized. It is appare that the medical profession at large needs further pre aration for effective participation in the investigation health problems in which their activities as physicia may contribute the essential data.

The Care of Cardiac Patients.—*The pitfalls in the care* cardiacs are numerous, but mainly concern the original diagno of the case. Before a physician embarks on the treatment a given patient with heart disease he must ask *himself th* questions: *First, is organic heart disease present? Second, there evidence of congestive failure or coronary failure? Final* is there something peculiar about the problem that requi more than the ordinary type of treatment, *such as some fo* of surgical *operation (pericardial resection),* or is it a reversi form of heart disease, such as beriberi or thyrotoxic heart d ease? Only after these three questions are satisfactorily answer should the patient be placed on the customary program digitalis, diuretics, etc. When ordinary congestive heart failu is present, and the physician is certain that it is not due to o of the causes amenable to or curable by surgery, the proble is generally well treated by *the average* physician.—S. A. Levin M.D., Pitfalls in the Care of Cardiacs, *Annals of Internal Me cine,* June, 1955.

CONTROL OF POLIOMYELITIS THROUGH VACCINATION

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ecent progress in poliomyelitis research has cul- ited, after a decade of work, in the development of ful vaccine[1] to combat paralysis. The vaccine is the and currently the only, control measure usable on ge scale that appears to provide substantial immu- against the paralytic form of this disease. Poliomye- is a nationwide health problem that has increased in and significance in recent years. It is one of the few municable diseases, in fact, that has shown a rise in incidence and death rates in the United States dur- he past two decades. Nonetheless, the incidence of cal poliomyelitis today is considerably less than that any other infectious diseases.

1954, the third highest year of reported poliomye- incidence in United States history, 38,741 cases of myelitis (including both paralytic and nonparalytic) were reported to the Public Health Service. In the year there were about 50,000 reported cases of in- ous hepatitis, 61,000 reported cases of whooping h, 145,000 reported cases of streptococcic sore at and scarlet fever, and 683,000 reported cases of les. It must be remembered, however, that the ulative total of individuals with residual paralysis poliomyelitis mounts each year. About 75% of all of poliomyelitis in 1954 occurred in children 1 to ears of age, with peak incidence, for the country as ole, among children 5 to 9. The age-specific inci- e varies according to geographical area, however, in recent years a definite shift to peak incidence in r children and adults has been observed in some of the country. In terms of morbidity and mortality, myelitis ranks well below most diseases of child- l. It is, however, a significant public health problem use of: (*a*) its seasonal and epidemic nature, (*b*) sidual and permanent disabling effects, (*c*) the fear dread it inspires in parents, and (*d*) the absence, now, of effective control measures.

fection with poliomyelitis virus is characterized by tiplication of virus in tissues of the gastrointestinal t, with resultant shedding of virus in pharyngeal se- ions and feces. At some stage in this infection there be a transient viremia. In a small proportion of s, the central nervous system may be invaded during viremia. Classic symptoms of paralysis, therefore, de- p only in a small proportion of the infections. Anti- l immune bodies that result from natural infection or n vaccination do not prevent subsequent infection of gastrointestinal tract but act as a barrier during mia to block invasion of the nervous system.

o practical measures for controlling the spread of omyelitis infection from person to person are known, the poliomyelitis vaccine has been demonstrated to effective in preventing the paralytic form of the dis- . Gamma globulin, when used prior to the viremic e of the disease, offers some short-lived protective ct by passive transfer of antibodies. Since the ratio of gnized cases to subclinical infections frequently ap- ximates 1 to 100,[2] infection is widespread early in the course of poliomyelitis outbreaks. Thus, gamma globulin cannot be administered to the personal associates of persons with the disease in sufficient time to prevent the disease. Community-wide use of this material has not been shown to produce substantial benefits.[3] Gamma globulin is therefore of little practical value in the mass control of poliomyelitis. It does, however, have value in individual instances when given before exposure to virus.

SALK VACCINE

Salk succeeded in developing a vaccine in which there is virus inactivation by chemical means. The Salk vaccine is an aqueous suspension of inactivated poliomyelitis virus prepared from a selected strain of each of the three virus types grown on monkey kidney cells. The formaldehyde inactivation is designed to render the virus harmless, while preserving its capacity to induce production of antibodies.

To be suitable for widespread application, a preventive agent should meet the following criteria: 1. It must be safe; that is, there must be assurance that it will not produce or provoke disease and that untoward or undesirable reactions will be negligible. 2. It must be effective. It must either prevent the occurrence of the disease or modify its severity to an appreciable degree. 3. The method of administration must be practical of application in private and in public health practice. The available evidence indicates that the Salk vaccine meets each of these criteria. This evidence comes from studies conducted by Salk, from tests of pharmaceutical laboratories, and from a large-scale field trial carried out during the spring and summer of 1954 under the sponsorship of the National Foundation for Infantile Paralysis. The field trial was a controlled study in which about 450,000 children, 6 to 9 years of age, in 44 states, received the vaccine. An additional 200,000 children were injected with a placebo material, and 725,000 children represented uninjected, observed controls. Thomas Francis Jr., of the University of Michigan, who was in charge of the evaluation, presented a comprehensive analysis of the results on April 12, 1955.[4] The report indicated that the vaccine had been safe and effective in substantially reducing the risk of paralytic poliomyelitis

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[1] Salk, J. E.: Studies in Human Subjects on Active Immunization Against Poliomyelitis: I. A Preliminary Report of Experiments in Progress, J. A. M. A. **151**: 1081 (March 28) 1953; Studies in Human Subjects on Active Immunization Against Poliomyelitis: II. A Practical Means for Inducing and Maintaining Antibody Formation, Am. J. Public Health **44**: 994 (Aug.) 1954.

[2] Howe, A.: Acute Poliomyelitis, in Rosenau Preventive Medicine and Hygiene, edited by K. F. Maxy, ed. 7., New York, Appleton-Century-Crofts, Inc., 1951, pp. 292-310. Collins, S. D.: The Incidence of Poliomyelitis and Its Crippling Effects, as Recorded in Family Surveys, Pub. Health Rep. **61**: 327 (March 8) 1946.

[3] An Evaluation of the Efficacy of Gamma Globulin in the Prophylaxis of Paralytic Poliomyelitis as Used in the United States 1953, Public Health Monograph 20, U. S. Public Health Service Publication 358, Department of Health, Education, and Welfare, 1954.

[4] Francis, Jr., T., and others: Evaluation of 1954 Field Trials of Poliomyelitis Vaccine: Summary Report, Am. J. Pub. Health **45**: 1 (May, pt. 2) 1955.

in the vaccinated groups. The gross calculated degree of protection ranged from 60 to 90%; 60 to 70% effectiveness was found against disease caused by type 1 virus, the most prevalent type in cases of paralysis, and 90% or more effectiveness against that caused by type 2 and type 3 virus.

After its effectiveness was demonstrated in the field trial, the vaccine was licensed on April 12 for general use this year. Under sponsorship of the National Foundation for Infantile Paralysis, a large-scale immunization program was begun the second week in April among first and second grade school children. On April 12, Salk described a dosage schedule,[5] based upon antibody response studies, of three injections of 1 cc. each, to be given intramuscularly. The first and second injections are separated by an interval of two to six weeks and the third follows in approximately seven months. This differs from the schedule used in the field trial, when all three injections were given within a period of five to six weeks, only in the spacing of injections. Salk has presented evidence that the second injection is beneficial even if given after a number of months, and that giving the third injection about seven months after the first should induce a better antibody response than giving it earlier. In general, the revised schedule described by Salk was adopted for use in the vaccination program for first and second grade children sponsored by the National Foundation for Infantile Paralysis. The inadequate supply of vaccine has led to delay, in most instances, in giving the second injection.

DISTRIBUTION METHODS

The short supply of vaccine led to consideration in May of distribution methods and the establishment of age group priorities.[6] Under a voluntary plan of allocation and distribution, with age priorities based on risk of attack, the vaccine will be made available first to the children at greatest risk. For the country as a whole, the highest attack rates occur among children 5 to 9 years of age. The National Advisory Committee on Poliomyelitis Vaccine, which was established by the Secretary of the Department of Health, Education, and Welfare to study this problem, therefore recommended that this age group receive first priority. The committee has further recommended that, as vaccine becomes available, the existing priority group be broadened by adding, in equal proportions, children below 5 and above 9 years of age.

Medical organizations have agreed to follow a
tary control plan under which physicians will vacc
persons only within the priority groups. This place
sponsibility on the individual physician, with re
both to the use of the vaccine and to the education o
patients to accept use only in the priority age groups

PROVOCATION

The possibility that the phenomenon of provoca
might be involved in the injection of vaccine during
riods of high incidence or epidemics has aroused c
siderable discussion among physicians and scientis
On June 18, the National Foundation for Infantile Par
ysis convened its Vaccine Advisory Committee, rep
sentatives of certain professional groups, and spec
consultants, to consider this problem. The organizatio
represented included the American Academy of Pe
atrics, the Academy of General Practice, the Americ
Medical Association, the American Public Health As
ciation, the Association of State and Territorial Hea
Officers, and the U. S. Public Health Service. The gro
agreed unanimously [8] that "the total preventive effect
the vaccine in a period of rising poliomyelitis incide
should be much greater than the possible hazard fr
the provoking effect of the injection. Those present a
concluded that the benefit to be gained by poliomye
immunization, in contrast to the small potential risk
provocation, increases in proportion to the severity
the poliomyelitis incidence, since a larger number
paralytic cases should be prevented during the en
period of the epidemic."

This general recommendation was based on infor
tion available at this time. Specifically, the vaccine is
pected to produce some antibody within a week to
days after the first injection, and even small amount
antibody may have some effect in preventing paral
poliomyelitis. Therefore, "the onset of antibody resp
to the vaccine may eliminate any subsequent provo
effect of the vaccine injections." The evidence for
includes experience with the use of gamma glob
during a 1952 epidemic in Sioux City, Iowa,[9] exp
ments on development of immunity in monkeys,[10]
observations on the occurrence of poliomyelitis in
southern states during the 1954 vaccine field trial.

Contraindications to the use of vaccine during
riods of high incidence cited by the group [8] were:
symptoms of minor illness, especially fever, sore thr
or gastrointestinal upset at the time of the proposed
jection; and (2) occurrence of a case of poliomyeliti
the household immediately preceding the proposed
jection. It is known that almost all the other mem
of the household are already infected when paralysis
appears, so that vaccine cannot be expected to pro
against an already existing infection, and an injectio
that time might provoke paralysis in the course of
otherwise inapparent infection.

SAFETY OF VACCINE

The question of safety of the Salk vaccine has a
been the subject of considerable public and professio
discussion. During the vaccine's development, field tr
and initial use, many problems arose, which were de
with through close cooperation between Salk, the ma

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[8] Recommendation on the Use of Poliomyelitis Vaccine During the Summer of 1955, New York, National Foundation for Infantile Paralysis, 1955.

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[10] Bodian, D.: Neutralization of Three Immunological Types of Poliomyelitis Virus by Human Gamma Globulin, Proc. Soc. Exper. Biol. & Med. **72**: 259 (Oct.) 1949.

cturers, and the Laboratory of Biologics Control of the ublic Health Service. The experience that had been ined by April 12, 1955, established confidence in the fety of the experimentally produced vaccine and pro- ded the basis for requirements designed to assure fety, purity, and potency.

The value of the vaccine as demonstrated in the 1954 ld trial, plus the over-all experience and competence the firms producing the vaccine and the participation the Laboratory of Biologics Control in the field trial sting and subsequent developments, led to prompt censing of the six pharmaceutical manufacturers whose plications were pending. Most of the lots of poliomye- tis vaccine were released on review of protocols, i. e., e manufacturer's detailed reports on manufacture and sting of each lot.

The occurrence of poliomyelitis among children re- eiving vaccine from the Cutter Laboratories led the ublic Health Service to request this manufacturer to ithdraw its product, and the company complied im- ediately. A thorough investigation of the plant and its anufacturing processes was instituted. Extensive labo- atory tests of the material and field observations of the ccurrence of all poliomyelitis cases were begun. Shortly ereafter, the in-plant study was extended to other embers of the industry in order to determine whether here were common problems relating to production ethods and to the adequacy of the testing requirements. This led to a temporary suspension of the nationwide accination program.

The investigation indicated that the records that the manufacturers had been required to submit did not bring out certain important data on processing and testing. Manufacturing experience revealed that inactivation of virus in the production of vaccine did not always follow the predicted course, inasmuch as infective virus was sometimes detected after the expected completion of inactivation. This meant that greater dependence must be placed as an integral part of process control, on tissue culture testing of larger volumes of vaccine to detect small quantities of residual live virus.

Changes incorporating this new knowledge were made in processing control and safety testing. New principles of testing were added to the Minimum Requirements for the production of poliomyelitis vaccine.[11] These principles should result in a product essentially free of live virus. On the basis of probability computations, a liter of the vaccine made under the amended requirements should contain 5 or more live virus particulates less than once in 100,000 times (see this issue, page 1249). Risk of transmission of poliomyelitis through use of such vaccine is negligible. Remember, however, that 100% safety cannot be assured for the poliomyelitis vaccine, just as it cannot be assured for other biologicals used in preventive and therapeutic medicine.

NEED FOR CONTINUING STUDY

It has been obvious from the time of the field trial that the vaccine needs further study and observation. Precise knowledge of the vaccine is limited to the experience and data gained as a result of that trial. The effectiveness of the vaccine has not yet been studied in age groups other than those observed in 1954. Research and additional experience with application of the vaccine should enable us to fill many gaps in our knowledge. It must be remembered that the need for continuing study of poliomyelitis in general and of this vaccine in particular is no different than the need for continuing study of other diseases and of the preventive and therapeutic agents.

The field trial provided no data on the effectiveness of the vaccine in children under 6 or over 9 years of age. The data indicated, in fact, that the greatest amount of protection occurred among children 9 years of age and that the degree of protection decreased progressively with age. Although Salk has presented data showing that children under 6 developed antibodies after injection, the relationship between antibody development and protection against paralytic poliomyelitis in these younger children is still under study. There is, therefore, need for additional information and for careful evaluation of the vaccine's effectiveness in both older and younger children. The answers can come only if large numbers of children are vaccinated and observed.

Optimum dose and interval between injections represent other problems needing additional study. Here again firm knowledge is limited to the field trial experience. The effectiveness of the vaccine under the modified dosage schedules that have been recommended for use this year remains to be determined. The question of duration of protection and the best timing of "booster" shots cannot be answered at this time. It is not yet known whether additional injections will be needed at stated and frequent intervals or whether the first series will provide protection for an extended period of time. Salk has observed detectable levels of antibody for 28 to 30 months after vaccination (see this issue, page 1239).

Additional research is also going forward on safety of the vaccine. The Mahoney virus strain, a strain of type 1 virus that is highly antigenic but is also highly invasive, is now employed in the vaccine. In order to provide an additional margin of safety, there is general agreement that a type 1 strain that has satisfactory antigenic properties but that is less invasive should be sought, with a view to substituting it in the vaccine. Several laboratories are now working on this problem. Other problems related to virus vaccines and the control of poliomyelitis will be under study. Among these are the combination of the Salk vaccine with other prophylactic agents, just as diphtheria and tetanus toxoids are now administered together, and the development of vaccines based on different principles than those employed in the Salk process.

Although we can expect further research and observation to lead to improvements, the vaccine is, at present, our most useful weapon in the prevention of paralytic poliomyelitis. Its development has opened the way for new achievements in poliomyelitis control. This medical discovery, like others in the past, brings new opportunities in preventive medicine to the practicing physician and the public health worker.

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[11] Technical Report on Salk Poliomyelitis Vaccine, Public Health Service, Department of Health, Education and Welfare, June, 1955.

DISCUSSION OF PANEL ON PROSPECTS FOR CONTROL OF POLIOMYELITIS

Dr. Albert Sabin, *Cincinnati:* With full appreciation for the important recent advances in our knowledge of immunization against poliomyelitis, it may nevertheless be said that the prospects for the control of poliomyelitis depend more on what still remains to be learned than on what has been learned thus far. Salk has demonstrated that a sufficiently potent, formalinized vaccine can be prepared in the laboratory to produce antibody in children who had none to begin with, and the extensive field trial of 1954 has provided evidence that the incidence of paralytic poliomyelitis in school children can be significantly reduced even by vaccines that are not of optimal potency. The important questions now before us are concerned with the quantitative aspects of the safety and effectiveness of such vaccines produced on a mass scale for mass use in human beings of all ages. The most recent experience has shown that it is possible to prepare many large lots of formalinized vaccine that can be administered to millions of children with impunity. On the other hand, the circumstances surrounding the serious epidemic of type 1 paralytic poliomyelitis that has followed the use of two large lots of mass-produced vaccine indicate that the originally prescribed safety tests do not with regularity detect minimal amounts of virus that can become a source of considerable danger. This is due to the fact that at least one of the components of the vaccine, the type 1 virus, is the most virulent strain studied thus far. More recently material produced by another company has come under suspicion because of the occurrence of a small but disproportionately unexpected number of paralytic cases, in some of which there was initial paralysis in the inoculated extremity. It is possible that the more stringent safety tests that were recently recommended by the U. S. Public Health Service may avoid such accidents in the future, but the effectiveness of these new procedures has not yet been established by tests on the lots of vaccine that have proved dangerous in recent weeks. Children without antibody may be as susceptible to minute amounts of fully virulent virus as any tissue culture bottle or monkey. Therefore, 100,000 children may still be better indicators of minute amounts of virus that have not been inactivated than the smaller numbers of tissue culture bottles and monkeys that can be used practically in the most rigid safety tests. Accordingly, it would seem to me highly desirable to replace the virulent viruses currently used in the preparation of formalinized vaccine by experimentally segregated or naturally occurring antigenically potent strains that are dominantly avirulent for monkeys by both the intracerebral and the intramuscular routes. While a single tissue culture dose of the virulent type 1, Mahoney virus can produce paralysis in intramuscularly inoculated monkeys, 10 million tissue culture doses of the avirulent variants can be inoculated without producing paralysis. We now have such strains for each of the three types, and their antigenic potency after formalinization is now being investigated in Sweden and in England by the quantitative method of assay in guinea pigs developed by Dr. Sven Gard and his associates.

The antigenic potency of mass-produced formalinized vaccines must be carefully controlled by an adequate, quantitative method of assay if the expected protection is to result from their use. Salk's standard reference vaccine even in one dose seems to produce antibody more regularly than the three doses of most vaccines used in the 1954 field trial. Whether the various factors responsible for deterioration of antigenic potency in the 1954 vaccines have now been overcome and whether the current trend for more prolonged "cooking" with formaldehyde solution (Formalin) in an attempt to achieve a greater margin of safety might affect antigenic potency—these are both questions that cannot now be answered, because the estimates of potency currently in use in this country either are not sufficiently quantitative or are unrelated to human response. Studies recently completed and communicated to me by Dr. Sven Gard in Sweden indicate that the guinea pig method of assay yields quantitative data similar to those obtained in children without antibody and should therefore become a useful tool for safeguarding the potency of formalinized poliomyelitis vaccines. If one can be assured of getting mass-produced vaccines as good or nearly as good as Salk's standard reference vaccine, one might look forward to better results than were obtained in the 1954 field trial, when th effect decreased progressively in younger age groups t a point where the protection afforded 6-year-old childre was not regarded as statistically significant.

And how long will the protective effect of the best fo malinized vaccine last? The only honest answer, course, is that we do not know. If not more than the cu rently proposed three doses are given, time will provid some sort of answer only if the poliomyelitis surveillan unit established by the Public Health Service during t recent emergency will continue its excellent work for long as it may be necessary to obtain an answer. Salk hypothesis that natural infection may itself provide t booster for an accelerated antibody response and th prevent paralysis is based on observations following i tramuscular injections of preformed antigen but is n supported by any data on the effect of feeding virus. M own observations on feeding attenuated viruses to vo unteers with barely detectable or minimal amounts antibody indicate that the antibody response in suc people is usually not accelerated.

Will widespread immunization of the younger a groups with formalinized vaccine interrupt the chain infection and thus eliminate the paralytic disease that i many countries with advanced standards of hygiene now such a serious problem in those persons who ar over 20 years of age? Again the honest answer is that w do not know, for alimentary infection in the presence c antibody may depend on the size of the infective dose, an this also must be investigated in greater detail in the fu ture. A recent serologic survey completed in my labora tory indicated that among eighty-three 21 to 30-year-ol Americans of the middle income groups 57% had n lemonstrable antibody for type 1 and 87% lacked antiody for one or another type of poliomyelitis virus. These eople also need protection against paralytic poliomyeitis, and if a vaccine provides only transitory immunity ve may well raise a highly susceptible adult population hat would be in great danger if a highly virulent polionyelitis virus were suddenly introduced in their midst rom the outside world.

Should we wait for years to find out what the best illed virus vaccine will do, or should we now increase our fforts to learn everything we can about the possibility of mitating the mechanisms by which natural infection mparts lifelong immunity? I think it would be poor stratgy to wait. The experiments carried out in my laboratory n experimentally segregated and naturally occurring atenuated poliomyelitis viruses of all three types, the reovery by Li and Schaeffer of an especially avirulent ype 1 strain derived from the Mahoney virus, and the xperiments of Koprowski and his associates with atenuated types 1 and 2 viruses all indicate that suitable trains are now available for pursuing this problem slowly nd cautiously but nevertheless vigorously.

My own studies on human volunteers have already ndicated that the ingestion of as little as 0.001 cc. of ulture fluid of any of the three types or simple swabbing f the throat with minute amounts of virus can induce ymptomless immunogenic infections. It is especially oteworthy that the attenuated viruses possess the sigificant characteristic of not producing viremia despite xtensive multiplication somewhere in the alimentary ract. Neither the original attenuated viruses nor the rogeny resulting from multiplication in the alimentary ract produce paralysis in chimpanzees after direct inculation of large doses into the gray matter of the spinal ord.

It would be fine if it should turn out that there were no eed for the practical application of the information acuired from careful studies on attenuated viruses, but it would be a pity not to have this knowledge in reserve if it should turn out that it were needed for the ultimate control of poliomyelitis on a world-wide basis. Let us not confuse the first great victory with total victory, and let us not disband too soon the great poliomyelitis army and general staff that has made the present advances possible. Finally, let us be guided by the words of Sir Francis Drake, who said: "Grant us to know that it is not the beginning, but the continuing of the same until it is thoroughly finished, which yieldeth the true glory."

DR. JOSEPH STOKES JR., Philadelphia: In discussion of poliomyelitis vaccination at this critical period following Dr. Francis' and Dr. Salk's most valuable reports of success in children with certain batches of vaccine; and following the later reports of infective batches of vaccine in the United States resulting in a crippled vaccination program; and finally when the season for the disease is upon us, it would not appear worthwhile in this panel to review the difficult problems of public relations. The primary question on every physician's mind here today, in fact in the entire country both among the medical profession and the lay public, is with respect to the safety of the vaccine and not with respect to its potency.

I had no opportunity to see these papers, except a considerable portion of Dr. Salk's, before this morning but have been impressed again with how easy it is to discuss increases in antibodies and how difficult it is to come to grips with the question of safety. It has been tempting when drawing a curve of inactivation of virus by formaldehyde solution (Formalin) to make it a straight line, showing complete inactivation of the virus within a few days. We have seen such a straight line this morning. To my knowledge laboratories working in this field, and I have talked to a considerable number in the last few days, all have agreed that the inactivation of the poliomyelitis viruses by formaldehyde solution, 1:4,000, in a majority of instances is not a straight line but a curve that varies at times up to the point of being almost asymptotic.

Since testing samples of vaccine for infective virus must be random at present, and if the curve of inactivation by formaldehyde solution, in a majority of instances, is not a straight line, then the infective particles may be missed in such sampling procedures. In this respect it would be extremely helpful if methods of concentration and purification of the virus were available for such testing for infective particles so that the sampling would afford more complete information. Such methods are now being made available. But at present there is no way of being completely certain that batches of vaccine are not infective. If the inactivation of virus is a curve in the majority of instances, then there may be a very narrow separation between a vaccine batch that is infective and a batch that no longer has potency for immunizing. It has been said that the infective batch or batches mentioned this morning were carefully reviewed with respect to their method of preparation and that no essential difference was found, except the method of preservation, between the preparation of these infective batches and other batches of vaccine. I believe this to an extent is the crux of the fear expressed concerning safety, in that no specific fault has been demonstrated that has separated the infective batches from others until Dr. Shannon's report this morning. It is fortunate that in Canada, where 700,000 doses of vaccine have been administered without evidence of infection, one laboratory has been responsible for the production of all of the vaccine, but, when the range between infectivity and potency may be very narrow, the necessary multiplication of laboratories for production would seem to enhance the dangers.

Also, I should appreciate some discussion from Dr. Salk of the possibility of reactivation of virus after standing when the formaldehyde has been neutralized, or of reactivation after injection. I am glad to hear him say that he feels the less virulent and yet antigenically active strains of type 1 should be used in preference to the highly virulent, but not so antigenically active, Mahoney strain used in the original trials.

It is important to remember that the reports we have heard are but one step, although a very important one, in the long road ahead toward the control of poliomyelitis. In considering this slow progress in such control I should like to ask three fairly simple questions: 1. Why not protect the central nervous system with passively transferred antibodies either administered parenterally or acquired transplacentally while the individual is exposed by the natural alimentary route to attenuated living virus that does not produce paralysis in monkey or man? 2. Would this procedure not involve a lesser risk than a possible escape of a few particles of living, but fully virulent, virus from formaldehyde-inactivated vaccine, which at times may not be inactivated, and which is administered by the unnatural parenteral route to the most susceptible species, man? 3. Why run the risk of precipitating paralysis of a limb by injection of any material other than antibodies in an individual who may be harboring virulent virus?

Five years ago, Koprowski, Jervis, and Norton, who originated the use of attenuated living virus, fed a group of young children live, attenuated type 2 poliomyelitis virus (the T N strain) in the form of cotton rat cord tissue. None of the children showed signs of illness or any untoward reaction following the oral administration of virus, and all developed homotypic antibodies in their blood. Subsequently, Koprowski, Jervis, and Norton demonstrated that the level of protective antibodies remained high during a four year observation period after the single feeding of modified live virus. In the course of the past three years, a type 1 strain of virus the S M strain) became attenuated and proved to be onpathogenic for laboratory primates when injected intracerebrally. This strain was then employed by these investigators for oral administration to a group of 15 children who had no poliomyelitis antibodies prior to feeding. The results were most encouraging, since all of the children who ingested virus developed homotypic antibodies, again without the slightest sign of illness.

In the course of these and more recent clinical trials conducted by Koprowski, Jervis, Norton, and myself, observations were made on the response of nonimmune individuals to the simultaneous feeding of types 1 and 2, as represented by the SM and TN strains respectively. Good antibody responses were obtained in 22 children who received gamma globulin immediately after being fed the SM strain of type 1 virus, thus indicating that the gamma globulin did not seem to affect the antigenic activity of the attenuated virus. Each of the 22 individuals developed antibodies with no sign of illness after becoming an intestinal virus carrier. Similar results have been obtained with the T N strain of type 2 virus.

I have mentioned these results to indicate a possible method of immunization that could presumably require no parenteral injections in infants and perhaps a single injection of gamma globulin in older children, while at the same time permitting the development of active immunization during the period of passive immunity afforded to infants by the mother, or in older children by the gamma globulin. Such a method is obviously in its earliest experimental trials, but the results already obtained fully warrant further active study.

QUESTIONS AND ANSWERS

The following questions were among those asked by the members of the audience at the Panel Discussion on Poliomyelitis held as part of the Annual Meeting of the American Medical Association, Atlantic City, June 7 1955. The answers to these questions were given an subsequently edited by the members of the panel unde the direction of the moderator, Dr. Van Riper; the questions have been grouped together under various headings.—ED.

Vaccine Preparation and Storage

QUESTION: How long does it take to prepare each l of vaccine if it passes each test satisfactorily? What i the shortest number of days?

ANSWER: A total of 120 days is required to complet the processing from virus culture to final testing of th packaged vaccine.

QUESTION: What antigenicity tests are done on th various lots of various producers to assure uniform lo of vaccine?

ANSWER: The antigenicity tests done on the variou lots of vaccine to assure uniformity are made by vaccinating groups of 12 monkeys and testing the seru antibody level against each of three types after a standard schedule of immunization. For this purpose thre doses a week apart are administered and blood draw one week after the third dose. The level of antibody induced by the unknown vaccine is compared with th induced by a standard preparation referred to as reference vaccine "A." The geometric mean level of antibod induced by the test vaccine must be equal to or great than a certain level as compared with reference vacci "A." A vaccine that fails to pass such tests for all thre types is considered unsatisfactory for use.—JONAS SALK, M.D.

QUESTION: For inactivation are these the total processes used: Formalin, heat, dilution, and usual steri processes of manufacture?

ANSWER: The virus fluid is filtered, formaldehy solution (Formalin) is added to it in concentration 1:4,000 and it is then incubated at 37 C until all vir particles have been inactivated.

QUESTION: Do the present vaccines lose their poten with age? Do you recommend refrigeration storage the vaccine?

ANSWER: The vaccine, under present standards, ha a six month expiration date. It should be stored unde refrigeration at a temperature between 35 and 50 F, th lower limit being preferred. Freezing should be avoide

QUESTION: Could you relate the names Brunhilde Lansing, and Leon to virus type (either 1, 2, or 3) an to the names Mahoney, MEF, and Saukett now bein used?

ANSWER: Brunhilde and Mahoney are strains of typ 1, Lansing and MEF-1 strains of type 2, and Leon an Saukett strains of type 3 virus.

Safety Tests

QUESTION: What safety tests are now used: bacteriological, monkey inoculation, other animals, tissue culture? Are these tests done on all lots?

ANSWER: Prior to inactivation each virus pool is tested for the presence of B virus and Mycobacterium tuberculosis. After inactivation each monovalent strain pool is tested for infectious virus by tissue culture methods. Each lot of trivalent vaccine is tested for infectious virus by tissue culture methods. The final vaccine pool is tested for lymphocytic choriomeningitis virus in mice inoculated intracerebrally. The final vaccine pool is tested for residual active poliomyelitis virus by intracerebral inoculations into 12 rhesus or cynomolgus monkeys and intramuscular inoculations into 6 cynomolgus monkeys.

QUESTION: Is it clear that after the new safety measures outlined by Dr. Shannon the vaccine will still be as potent as the vaccines used in the field trial?

ANSWER: The added safety testing does not in any manner affect the potency of the vaccine.

QUESTION: Does vaccine now in hands of state and school health departments meet new safety standards for resumption of inoculation programs? So far as we know these lots have not been recalled and retested.

ANSWER: All lots of vaccine in the hands of public health departments meet the revised standards for production and testing. All lots not meeting these requirements have been recalled by the manufacturer.

QUESTION: 1. Was each lot of vaccine used in 1954 approved by the manufacturer, by Dr. Salk's laboratory, and by the National Institutes of Health before release? 2. Was the same procedure followed for all vaccine in 1955? If not, please give details.

ANSWER: 1. Yes. 2. The licensed vaccine released by the surgeon general of the U. S. Public Health Service for use in 1955 was tested for safety, potency, and sterility by the manufacturer. In some instances complete or total testing for safety, potency, and sterility was carried out by the National Institutes of Health.

QUESTION: Are the controls of vaccine made at Connaught Laboratory in Canada similar to the United States controls? The program was continued in Canada.

ANSWER: The vaccine produced by the Connaught Laboratories in Toronto, Canada, for use by the Canadian Provincial Health Departments, was made in the same way in which the vaccine was produced in the United States. The Connaught Laboratories tested the vaccine for safety, potency, and sterility and concurrently the product was tested by the Dominion Laboratories in Ottawa. The program was continued in Canada with approximately one million children receiving two doses of vaccine, without the development of a single case of associated paralysis.

QUESTION: Were tissue culture tests (in various concentrations) used in 1954 vaccine?

ANSWER: In 1954 the vaccine was tested for presence of viable virus both in tissue cultures and by monkey inoculation.

Vaccine Dosage and Schedule of Administration

QUESTION: What is now considered to be the ideal interval between the three injections?

ANSWER: The present recommended schedule for vaccine administration is: (1) 1 cc. of vaccine injected intramuscularly; (2) 1 cc. of vaccine injected intramuscularly two to four weeks following the first injection; and (3) a booster shot of 1 cc. injected intramuscularly not sooner than seven months after the second dose and prior to the onset of the next epidemic season.

QUESTION: How long after the first injection can the second one be given and still produce what would be considered an effective immunization?

ANSWER: It has been reported that the sensitization of the individual that results from the first injection of vaccine is not lost if the second dose is delayed for as long as six months to a year; however, optimal protection cannot be anticipated until the complete series of three injections has been given. Dr. Salk has indicated that total antibody response is in direct proportion to the total mass of the antigen.

QUESTION: Is it advisable to administer the second dose of poliomyelitis vaccine as late as two months after the first dose? Our first injections were given April 25, 26, 27, 1955 in Memphis, Tenn. Vacation period began June 3, 1955.

ANSWER: The second dose of vaccine should be given as soon as the vaccine is available provided a period of at least two weeks has elapsed since the first injection.

QUESTION: First doses of vaccine were given many weeks ago. A long delay has ensued. Shall we now ignore the first dose and begin with a new first dose?

ANSWER: The effect of the first dose of vaccine is not lost if the second dose follows the first within a 12 month period.

QUESTION: How would 2 cc. of vaccine given affect (1) immunity response and (2) undesirable reactions?

ANSWER: 1. The use of 2 cc. of vaccine as the primary sensitizing mass would probably not be any more effective than 1 cc. 2. Many instances are reported of children having received 2 cc. of the vaccine without reaction.

QUESTION: Because of three types of virus, it is advisable to vaccinate previously infected children and adults?

ANSWER: Yes. Paralytic consequences of poliomyelitis infection give immunity only to the virus of the type that caused the paralytic infection. The individual remains susceptible to paralytic infection by the other two types until complete immunity is attained to all three types.

QUESTION: In light of the fact that the Salk vaccine is a pooled three-virus vaccine, what would you advise concerning vaccination in the case of 9-year-old child who last summer had poliomyelitis affecting the right side of the body? Should one give the pooled vaccine or only use the two viruses in separate vaccination to immunize against bulbar involvement?

ANSWER: All three types of virus may produce the same paralytic consequences. Until a simple, readily available test for immunity is developed, an individual who has already suffered a paralytic attack of poliomyelitis should receive the trivalent vaccine.

Clinical Questions

QUESTION: Does the poliomyelitis vaccine protect against the whole disease (such as enteric manifestations) or does it simply prevent the paralytic form?

ANSWER: The vaccine does not protect the individual from subsequent enteric infection; where effective the vaccine only protects aginst the paralytic consequences of systemic infection.

QUESTION: Does the Salk vaccine have any use in treatment of poliomyelitis?

ANSWER: No.

QUESTION: If poliomyelitis does develop in spite of injection with the Salk vaccine, is the clinical picture and symptom pattern the same as the usual picture of polioyelitis or is there any alteration or modification of mptoms?

ANSWER: An individual incompletely immunized may present clinical symptoms similar to those seen in a vaccinated person. The Francis report suggested that, where clinical infection occurred in spite of vaccination, it was less severe.

QUESTION: Should we postpone tonsillectomies until the end of the poliomyelitis season because of the danger of precipitating bulbar poliomyelitis in children or in close contacts of children who have been inoculated with Salk vaccine produced under the old standards for safety in which there is no certainty that all the virus in the vaccine is actually killed?

ANSWER: Elective tonsillectomies should be postponed when cases of poliomyelitis are being reported in the community. This practice should be continued until there is further evidence as to the effectiveness of the immunization that results from the use of the Salk vaccine.

Contraindications

QUESTION: Please list specific contraindications to poliomyelitis immunization. What of immunization to children recently ill with repeated upper respiratory infections?

ANSWER: The same contraindications to use of poliomyelitis vaccine should be observed as in the use of other comparable biologicals. Vaccination should be delayed where an individual has had known contact with a paralytic poliomyelitis infection, either in the home or among close intimate contacts. A child who evidences illness should not receive the poliomyelitis vaccine.

QUESTION: Are there any contraindications to giving the poliomyelitis vaccine shortly after recovery from illnesses such as chicken pox, mumps, purulent meningitis, or acute encephalitis?

ANSWER: As soon as an individual is completely recovered from an infection such as chicken pox, mumps, purulent meningitis, or acute encephalitis, it should be perfectly safe to carry out a course of poliomyelitis vaccination.

QUESTION: Is there any contraindication to the giving of other vaccines (typhoid, tetanus toxoid) at the time of giving poliomyelitis vaccine?

ANSWER: There is no reason to believe that a multiple antigen may not be given, and eventually poliomyelitis vaccine may be given combined with other biologicals.

Reactions to Vaccine

QUESTION: What are the percentages, approximately, of reactions to the first inoculation of vaccine in school children in 1955?

ANSWER: Untoward reactions following the administration of properly inactivated poliomyelitis vaccine have been minimal. This matter was thoroughly explored and presented in the Francis report evaluating the 1954 field trial. No major reactions could be attributed to the vaccine. Minor reactions were as frequent among children who received placebo as among those who received vaccine; namely, 0.4%. Experience in the 1955 vaccination program has not been evaluated in the same way as data collected for the 1954 field trial evaluation; however, there is no reason to believe that the incidence of reactions to properly prepared vaccine was any higher in 1955 than in 1954.

QUESTION: Is there any possible danger of horse serum allergic reaction to the Salk vaccine?

ANSWER: There appears to be no danger of allergic reactions in persons sensitive to horse serum.

QUESTION: What authorities on Rh erythroblastosis have approved the safety of the poliomyelitis vaccine from the standpoint of Rh trouble? What are views of Levine and Wiener?

ANSWER: Wiener is on record as having stated that Rh-Hr sensitization would not result from the use of the Salk vaccine.

QUESTION: What are the possibilities of developing chronic glomerulonephritis with repeated use of the Salk vaccine?

ANSWER: Adequate follow-up on a number of individuals who have received repeated injections of the Salk vaccine fail to show the development of any evidence of kidney damage.

QUESTION: May allergy injections such as "cold vaccine" be given in close proximity (one week) to administration of poliomyelitis vaccine?

ANSWER: Yes.

Negative Phase

QUESTION: Has any investigative work been done or, not, will investigative work be done in the immediate uture to determine whether children who have titratable evels of poliomyelitis antibodies in their blood as a reult of either prior poliomyelitis infection or inoculation f poliomyelitis vaccine will after receiving an injection f poliomyelitis vaccine experience a negative phase rection, with marked drop in antibody titer during the rst 24 or more hours after inoculation, before the antiody titer rises to new high levels? If such a negative hase does occur, the giving of poliomyelitis vaccine durng poliomyelitis epidemic periods could pose a hazard o children who may already be immune and who harbor oliomyelitis virus in their intestinal tracts.

ANSWER: Studies have been done to determine whether or not a drop in antibody titer occurs after inculation, and if there is any change it has not been erceptible even in individuals with low levels of antiody.—JONAS E. SALK, M.D.

QUESTION: Is there any increased susceptibility to oliomyelitis infection immediately after first vaccine ose? In other words, is there a negative phase?

ANSWER: This question can be answered in terms of ntibody level wherein it is found that antibody level rises rather than declines after the first dose of vaccine. As for a single dose of vaccine increasing susceptibility, here are no theoretical reasons why this should be the ase. In experimental animals it has been shown that ntibody development and resistance to infection occur lmost simultaneously.—JONAS E. SALK, M.D.

Epidemiological Questions

QUESTION: 1. What are the chances statistically that n immunized child will develop poliomyelitis from the vaccine? 2. What are the chances that an immunized child will develop poliomyelitis in spite of the vaccine? 3. What are the chances that a nonimmunized child will develop poliomyelitis?

ANSWER: 1. None from properly inactivated vaccine. 2. The chances that an immunized child will develop poliomyelitis in spite of having been vaccinated vary with he virus type. The chance of developing type 1 poliomyelitis is approximately 30% and of type 2 or type 3 perhaps 10%. 3. A study by Kumm on the risk of conracting poliomyelitis concluded that among children born in Connecticut, Massachusetts, New York, and North Carolina in 1930, 1931, or 1932, one out of every 156 acquired poliomyelitis in the first 20 years of life. Variations in this figure could be expected in different localities.

QUESTION: Dr. Francis referred to those who did not participate in the field trials as a "different population." What is meant by saying that the rate of poliomyelitis in this group is irrelevant and, if so, why? What is meant by "a different population?"

ANSWER: It has long been suggested that studies based upon volunteer participation possess an inherent difficulty if those who refuse to volunteer are accepted as controls. A number of studies have also pointed out that antibodies and resistance to poliomyelitis are acquired later in populations of high economic status than in the lower economic groups. There were indications that volunteering for participation in the evaluation program might well be influenced by such factors and consequently that those who refused would present characteristics that would suggest that they were really a more resistant segment of the population immunologically. A survey, to which reference has been made, did in fact yield results indicative that the "no's" were a different population. The population receiving vaccine and placebo are parts of the same population that requested participation, apparently similar in every way. The difference in incidence between placebo and uninoculated groups was thus anticipated. The uninoculated who refused inoculation are not part of the study.—THOMAS FRANCIS JR., M.D.

QUESTION: 1. Just what is meant by the vaccine being 60 to 90% effective? 2. Does it mean that in certain groups given the vaccine only 60 out of 100 showed protective antibodies?

ANSWER: 1. The effectiveness of the vaccine was measured by comparing the paralytic attack rate among those vaccinated with the rate observed among controls. Thus, if there are 60% less cases in the vaccinated than would be expected among the same children had they not been vaccinated, the vaccine is considered 60% effective. 2. No. Effectiveness was measured in terms of protection against paralytic disease, not by measuring presence or absence of antibodies.

QUESTION: 1. What is the hazard of giving vaccine in an epidemic season? 2. What is the hazard of giving a second dose?

ANSWER: 1. The hazard of giving vaccine in the epidemic season is less than the protection afforded by the vaccine. 2. Since the first dose of vaccine has already produced detectable antibody, though not enough to assure total protection, it is sufficient to eliminate any hazard in connection with the giving of the second dose of vaccine.

QUESTION: Instead of giving day-to-day reports on poliomyelitis vaccination or predicting by weeks and months, why not postpone start of immunization until fall months when possible poliomyelitis virus carriers will have diminished and possibility of activating a dormant virus will be less risky?

ANSWER: As soon as the supply of poliomyelitis vaccine is adequate to meet the demand, immunization will undoubtedly be carried out during the season of the year when poliomyelitis outbreaks are less likely to occur in each community.

Provoking Effect

Question: What is the danger of giving intramuscular injections of poliomyelitis vaccine during the summer to children who might be contact carriers of poliomyelitis?

Answer: At a meeting held in New York City on June 18, 1955, it was concluded that "provocation" was minimal in connection with intramuscular injection of poliomyelitis vaccine; that the probable protection from paralytic poliomyelitis as opposed to the provocation of paralysis was so much greater that continued use of vaccine was recommended during the epidemic season.

Question: Does the stick of the needle predispose to paralytic poliomyelitis if the patient has poliomyelitis virus in the gastrointestinal tract?

Answer: In the absence of viremia there is no evidence to support the belief that the mere puncturing of the skin would provoke an attack of paralytic poliomyelitis.

Question: What about any injection during the poliomyelitis season? Even a blood cell count?

Answer: In the presence of viremia any parenteral injection may result in the localization of paralysis in the extremity into which the injection is made. This is especially true where the precipitated biologicals are used, such as tetanus toxoid, diphtheria toxoid, or pertussis vaccine. There is no evidence to support the belief that the mere puncturing of the skin or taking a blood sample for a blood cell count would precipitate an attack of paralytic poliomyelitis.

Question: Is it safe to give poliomyelitis vaccine in the presence of an epidemic?

Answer: Yes—provided the individual has had no known contact with a paralytic case.

Question: How late in the summer should immunization be begun?

Answer: It is recommended that primary immunization be given at any time in the year, recognizing that if the individual is already harboring the virus of poliomyelitis the vaccine will not protect against the paralytic consequences of that infection. Primary vaccination should not be given to an individual who has had recent contact with a case of poliomyelitis.

Question: In a passive carrier of poliomyelitis virus does injection of vaccine predispose to infection?

Answer: In the presence of inapparent poliomyelitis infection there may be a slight provoking factor in connection with the use of the Salk vaccine. Since it requires 7 to 10 days for the vaccine to produce antibody, the vaccine cannot be expected to protect the individual from paralytic infection any more than the use of gamma globulin (giving passive immunity) can protect an individual already infected.

Virus Carriers

Question: If there is the possibility of there being infective vaccine, might not children who received the vaccine and who do not become afflicted with poliomyelitis be carriers of the poliomyelitis virus?

Answer: Contact with live poliomyelitis virus, either under natural circumstances or that which may occur by injection of unsatisfactory vaccine in this respect, produces equivalent effects in terms of virus carriage. However, from large-scale field experience, it appears that family contact and other associated cases have been observed only in connection with the administration of lots of vaccine that have contained readily demonstrable quantities of infective virus. Lots of vaccine that are not harmful to the recipient have by the same token not produced recognizable secondary cases.—Jonas E. Salk, M.D.

Question: Is there any danger of close association of uninoculated children with children who were recently inoculated with the Salk vaccine for the first or second time?

Answer: There is no danger of association between uninoculated and vaccinated children. As far as is known a vaccinated child may still become infected, since the vaccine protects against paralysis. However, it is known that animals who are solidly resistant to paralytic infection may still be infected with the virus and excrete it in their feces.

Question: Will not poliomyelitis vaccination subject parents to the disease, which will start epidemics in the child population that has not been vaccinated?

Answer: A properly inactivated vaccine will not subject the parents to the disease; neither can it start an epidemic in the unvaccinated child population.

Vaccine Research Problems

Question: What are the areas where more research is now urgent in the vaccine and control program?

Answer: The following areas of research deserve and are receiving attention: (1) duration in years of immunity to the paralytic disease following vaccination; (2) search for less pathogenic but still highly antigenic strains of virus that might be substituted for those now in use; (3) search for stable strains of attenuated virus that could be used as live virus vaccines; (4) methods of concentrating the vaccine to render the safety test more precise; (5) search for a stable strain of normal human or primate cells, susceptible to poliomyelitis virus, which will grow continuously in cultures and which would eliminate the necessity of importing monkeys from India; and (6) search for better methods of virus inactivation.

Question: I heard a research man state recently that ultraviolet may prove superior to Formalin in inactivating poliomyelitis. What is the basis for this? Is it pH?

Answer: Several investigators are experimenting with the use of ultraviolet irradiation as a method of inactivation of the poliomyelitis virus. This is a physical as opposed to chemical (Formalin) inactivation.

QUESTION: In studies on bacteriophage inactivated by x-ray irradiation there is evidence that the virus may later become activated on standing exposed to ordinary light; inactive virus particles combining to form live virus. Is there any danger of an analogous recombination for inactivated poliomyelitis virus to produce infective virus, particularly in a trivalent vaccine?

ANSWER: In the first place the experiments spoken of were not done by x-ray irradiation but were done by the use of ultraviolet light. Bacteriophages inactivated in this manner were reactivated by exposure to ordinary light. This is not recombination. Bacteriophages inactivated by ultraviolet light and then allowed to adsorb on bacterial cells do, by multiplicity reactivation, produce a few live virus particles. Nothing of this kind has ever been accomplished with animal viruses. On the other hand, when an animal cell is infected by many live, properly marked influenza virus particles, evidence of recombination has been obtained. Finally, there is no reason to believe that poliomyelitis viruses, properly inactivated by formaldehyde solution (Formalin), will become active upon exposure to light, or through the mechanism of multiplicity reactivation, or through recombination.

QUESTION: For how long is there appreciable antibody titer in the blood after a single primary injection of 1 cc. of Salk vaccine?

ANSWER: It is not known for how long there is appreciable antibody in the blood after a single primary injection of 1 cc.

QUESTION: Why is not influenza virus vaccine as effective as poliomyelitis virus vaccine?

ANSWER: This question cannot be answered simply and assumes that influenza virus vaccine is not as effective as poliomyelitis vaccine, which may not be true.—JONAS E. SALK, M.D.

Gamma Globulin

QUESTION: 1. Does gamma globulin ("antipoliomyelitis") provide any safety against "virus introduction or stimulation" due to Salk vaccine? 2. If we assume that there is a slight possibility that live virus particles may escape the safety tests, why not give gamma globulin simultaneously in adequate doses (analogous to the old diphtheria toxin-antitoxin preparation)?

ANSWER: It is not recommended that gamma globulin be given prior to the use of the Salk vaccine.

QUESTION: In the absence of Salk vaccine, should we give prophylactic gamma globulin this summer?

ANSWER: In the event of an epidemic outbreak of poliomyelitis in a community gamma globulin is recommended for mass prophylaxis for the most susceptible age groups.

QUESTION: Why not protect with passive antibody (immune globulin) and infect with attenuated virus enterically?

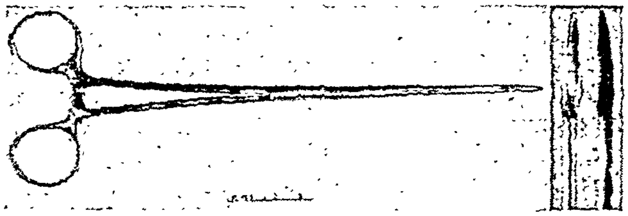
ANSWER: Until such a time as safe attenuated live virus vaccine is available, it is impossible to consider passive immunization with gamma globulin to be followed by the administration of attenuated virus vaccine.

CLINICAL NOTES

ENDOCERVICAL FORCEPS FOR EVALUATION OF THE CERVICAL FACTOR IN INFERTILITY

Allan Palmer, M.D., San Francisco

A new instrument has been devised for the purpose of evaluating the cervical factor in the infertile female. The tenacity of the endocervical mucus often precludes obtaining a satisfactory specimen by suction with a pipette or other available instrument for the purpose of testing its flow elasticity (Spinnbarkeit), spermigration, and postcoital sperm activity. The endocervical forceps shown (figure) enables one to easily obtain an adequate specimen of mucus by simply inserting the closed instrument into the endocervical canal. When the instrument has been placed at the desired level between the internal and external cervical ora, it may be opened slightly, closed and locked, and then withdrawn. The lock on the instrument permits one to lay it aside momentarily without loss of the specimen, if there is to be a momentary lapse of time before it can be examined microscopically. The accurately fitting, smoothly concave opposable tips of the instrument (figure, right) enable one to detach and seal off a specimen of mucus regardless of its variable rheologic characteristics.



Endocervical forceps, with opposable tips (right).

Flow elasticity (Spinnbarkeit) can be measured or evaluated by opening the instrument over a centimeter scale and measuring the length to which the specimen can be stretched before it breaks. The flow elasticity may be regarded as "excellent" if the tips of the instrument can be opened and the mucus stretched to 10 cm. without breaking. The same specimen can then be transferred to a glass slide for microscopic examination. A spermigration test can be made by putting a drop of seminal fluid alongside the mucus, or the mucus may be examined for postcoital sperm activity (Sims-Huhner test). The instrument can also be used, with sterile precautions, for obtaining specimens of cervical mucus for antibiotic sensitivity tests in instances of cervical "bloc." An instrument for the Sims-Huhner test that embodies the principal features of the endocervical forceps has been described by Kerner.[1]

2107 Van Ness Ave.

This instrument was exhibited at the 4th Annual Meeting of the Western Branch of the American Society for the Study of Sterility, Palm Springs, Calif., Nov. 12-14, 1954, and at the 104th Annual Meeting of the American Medical Association, Atlantic City, N. J., June 6-10, 1955.

[1] Kerner, J. A.: An Instrument for the Sims-Huhner Test, Am. J. Obst. & Gynec. 66: 909, 1953.

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THE PRESENT STATUS OF POLIOMYELITIS VACCINE

Elsewhere in this issue of THE JOURNAL (page 1239) is a series of papers, discussion, and questions and answers by individuals interested in the use of the "Salk vaccine." At the A. M. A. meeting in Atlantic City in June of this year there was held a panel discussion on prospects for the control of poliomyelitis. The meeting was under the joint sponsorship of the A. M. A. Section on Preventive and Industrial Medicine and Public Health and Section on Pediatrics. Participating were Hart E. Van Riper, moderator, Jonas E. Salk, Thomas D. Dublin, Thomas Francis Jr., and Leonard A. Scheele. The discussion following the presentation of reports by Drs. Dublin, Francis and Scheele was to be opened by James C. McGuinness, Joseph Stokes Jr., and Albert B. Sabin.

After the meeting several papers were received from this joint session, and these are published in this issue of THE JOURNAL. In addition there is a second paper from Leonard A. Scheele that reveals some of the efforts made by the Public Health Service when questions on the usefulness and manufacture of the vaccine used in 1955 were raised. The discussion offered in written statements by Drs. Sabin and Stokes at the time of the meeting pertains to the papers offered at the panel discussion and not to the additional paper by Dr. Scheele. There also is included in this issue a series of questions and answers. The questions are from those raised by the audience of the joint A. M. A. section meeting, and the answers were given and subsequently edited by the members of the panel under the direction of the moderator, Dr. Van Riper.

There probably has not been any medical announcement during this century that has precipitated the discussion and controversy that followed the presentation of the Francis report in Ann Arbor on April 12. Because of the emotional impact of poliomyelitis on the average lay family one can realize how the public responded. At the same time there was a response, not so favorable, from many scientists who claimed such an announcement should have been made first in the usual way that matters of medical scientific importance are released. Also raised were questions by statisticians and epidemiologists. Then, when there appeared the first reports of poliomyelitis following the use of the vaccine the situation really became confusing. Charges and countercharges arose; accusations and counteraccusations followed.

During this period the Board of Trustees and members of the staff of the American Medical Association followed events closely, seeking scientific information for the doctors and their patients. Much that was learned was confidential, and much that was heard was rumor. There were many facts, but often they were shrouded from view by lack of information, sometimes by emotionally tinged presentations. As was pointed out earlier in THE JOURNAL, the Association had indicated its willingness to be helpful, but not much came of the offer. Thus the facts had to be gathered, sorted, and evaluated independently, a task not yet completed. Up to the present time the Association has not issued a statement on the efficacy and use of the vaccine, although it has commended those who have aided in the development of measures intended to control poliomyelitis. There are questions still needing answering, and the Association is continuing its study. In the meantime THE JOURNAL presents the papers offered at the A. M. A. meeting and other additional material for the information they contain.

APPLICATIONS OF MODERN GENETICS

In a review of the accomplishments of modern genetics, Glass [1] points out that in common with other scientists the geneticist possesses the power to effect great changes in the modern world but not the wisdom to evaluate the long-range effects of these changes or to direct the changes in ways that will ultimately produce the best results. In many respects there is no general agreement on the definition of these best results. A simpler problem arose during World War II when it was necessary to find a way to produce penicillin on a large scale. Strains of Penicillium giving a high yield of the antibiotic would grow only on the surface of the culture medium until geneticists produced a mutant by means of irradiation that would grow well throughout the medium. Geneticists also warned but in vain against the production of antibiotic-resistant strains of pathogens before such strains were actually produced. Now faced with a rapidly increasing world population, they are exploring ways of improving the nutritional value of plants and animals used for food. The production a few years ago of hybrid corn is a notable example.

Although the most fascinating phase of genetic study is the improvement of human stock, no means for accomplishing this has as yet been devised. One of the chief difficulties lies in the fact that a large proportion of the genes present in a given person are not manifest and that most characteristics of social significance depend on multiple genes. They are, therefore, rarely inherited *in toto* but when present represent a contribution of genes from both parents. The more genes involved in the transmission of a characteristic the less chance that it will be transmitted to one's offspring intact. Furthermore, a certain gene that in most combinations has a good (or bad) effect may in a certain rarer combination

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[1] Glass, B.: Genetics in the Service of Man, Johns Hopkins Mag. 6: 2-16 (Feb.) 1955.

e the opposite effect, or, as Glass puts it, "the geneti-
can scarcely appraise the absolute . . . effect of a
e; it must be judged by the company it keeps." Physi-
traits are most nearly determined by heredity, but
inherit only certain potentialities. These can be real-
l only within the limitations of the environment.
ntal traits are more modifiable by the environment
1 physical traits, and social traits or personality, al-
ugh affected by heredity, are altered by environment
1 the greatest ease.

dvances in medical science have aided in the pres-
ation and hence propagation of persons with such
essive genes as those giving a tendency to diabetes,
opia, various allergies, and certain types of deafness.
: proportion of such persons in our civilization is in-
asing. Thus medical science increases the burden it
st carry, because in the past many of these persons
uld have died in childhood or have been so handi-
ped socially as never to have married. Some of the
asures advocated to prevent degradation of human
ck include segregating the sexes to prevent propaga-
1 of institutionalized mentally defective persons, ster-
ation of such persons by ligating the spermatic ducts
the oviducts, and enacting laws against consanguin-
s marriages. None of these have made more than a
ble impression on the problem as a whole.

The more positive approach to the betterment of
nan kind, involving selective breeding of one type or
other, is not likely to gain wide acceptance because of
violent emotional reactions such proposals automati-
ly arouse. Aside from these emotional objections,
ass warns that the widespread use of a "perfect" donor
ough artificial insemination might lead to too great a
formity in a world where diversity is still highly de-
able. Furthermore, because harmful genes are hidden,
idely used donor might spread bad genes throughout
arge segment of the population before they could be
ected. This very thing has happened in the breeding
cattle by artificial insemination. As has been learned
certain royal families in the past, inbreeding brings
essive genes out into the open. If these are harmful,
they are more often than not, inbreeding will increase
: number of persons afflicted. It may be concluded
at it is easier to define good environment than good
redity. So far, the power to change man genetically
ceeds the wisdom needed to know in what direction
netic controls should be applied for best results.

OOD FOUNDATION

Elsewhere in THE JOURNAL (page 1284) is a report
the Committee on Blood of the American Medical
sociation that tells the story of the creation of the
ood Foundation. The creation of this foundation was
important step and reflects the untiring efforts by
M. A. representatives and others over a long period
time. While the Association has been interested in
ood-banking programs for some years, it was in 1953
at the House of Delegates adopted a resolution rec-
mmending the establishment of a coordinated national
ood program organized by the American Medical As-
ciation, the American National Red Cross, and other qualified organizations such as the American Hospital Association, the American Society of Clinical Pathologists, and the American Association of Blood Banks.

There are certain basic principles regarding the supply of blood, its storage and use that are mentioned in the report (page 1284). These are important, but perhaps of no less significance is the fact that the program of the Blood Foundation is voluntary. Therefore its success will depend on the degree of cooperation it will receive from those responsible for the blood-banking facilities in this country. There are many problems to be solved, and solutions may not always come easily; however, one can look with hope to the future in view of the stature of the organizations behind this foundation. Of great importance was the selection of the officers and directors of the Blood Foundation, and the men chosen reflect admirably the energy and leadership provided during the foundation's period of development. The doctors of America can hope to hear much about this comparatively new body in which they should be vitally interested.

MILD POLIOMYELITIS

A recent press release from the health department of the state of New York asks physicians to be watchful for "a non-paralytic polio-like illness." The department reported outbreaks of the disease in several areas within the state. This warning is timely. Such outbreaks have been observed elsewhere and have been commented on repeatedly by members of the Chicago health department. Apparently they are very common in this area, and it is not unusual to learn of a child who developed mild poliomyelitis after a history of playing with other children in his neighborhood but who suffered nothing more than the symptoms seen with a cold or mild intestinal upset. Unless one is on the alert for such histories the disease may be missed and an inaccurate diagnosis made. In fact, the intestinal upset has led to surgery within the abdomen, just as missed instances of pneumonia in the past have resulted in the removal of appendixes.

The press release from New York reads in part: "While the disease has symptoms very similar to those of poliomyelitis, it is very mild, with no paralysis, and recovery is generally within a few days. It occurs most frequently among young children and tends to affect a large number of persons in the same family. . . . The disease is characterized by headache, fever and nausea with moderate stiffness of the neck, an increased number of cells in the spinal fluid and occasional sore throat. Occasionally it has been accompanied by the symptoms of epidemic pleurodynia, or pains in the chest, and, rarely, by sores in the mouth suggesting herpangina."

The request from New York for information from physicians might well be heeded elsewhere in the country if this illness is prevalent. And as for prevalence, one needs only to keep in mind the attitude of a well-known epidemiologist who claims that poliomyelitis during the season is as prevalent as measles during an outbreak of this disease.

ORGANIZATION SECTION

BLOOD FOUNDATION

The Committee on Blood of the American Medical Association has authorized publication of the following report.

The incorporation of the Blood Foundation and the first meeting of its board of directors on May 7 of this year brought to a successful culmination the efforts of the Committee on Blood of the American Medical Association to join together the various voluntary organizations with major interests in the supply of blood and in blood banking. These attempts had their inauguration in June, 1948, when the House of Delegates authorized the Board of Trustees to appoint a liaison committee for the American Red Cross blood-banking program. The name of this committee was subsequently changed to the Committee on Blood Banking at the 1949 meeting and later to the Committee on Blood in December, 1952. The activities of the Committee were spurred by the action of the House of Delegates of the American Medical Association in passing the California resolution in 1953, which recommended the establishment of a coordinated national blood program organized by the American Medical Association, American National Red Cross, and other qualified organizations interested in blood banking.

The events leading up to this decision on the part of the House of Delegates can actually be traced back prior to World War II. At that time blood banking had been established as a practical procedure but most blood banks were operated in conjunction with large hospitals or medical schools. In many cities blood transfusions depended largely upon the existence of a pool of professional donors. Even before Pearl Harbor it was realized that if the country were to be properly prepared for emergency then blood procurement on some nationwide basis would be necessary. From discussions between the Army, Navy, National Research Council, and American National Red Cross a plan for an American Red Cross Blood Donor Service emerged on Feb. 4, 1941. Ten months later the United States was plunged into war and the demand for whole blood and plasma suddenly expanded into a real problem in logistics for the armed forces. Red Cross Blood Donor Centers were established in 35 cities, and 63 mobile units visited other areas on a prearranged schedule; between them these facilities drew a total of 13,326,242 pt. of blood during World War II.

REGIONAL BLOOD BANK PROGRAM

With peace in 1946 the Red Cross abandoned its war-time program of blood collection. Although new blood banks were established in many communities, others returned to the old system of reliance upon professional donors. Physicians trained by service in the armed forces to the ready availability of plasma and whole blood desired similar supplies for their civilian practice. Many chapters of the Red Cross urged reestablishment of the Red Cross system of collection for voluntary donors. In 1947 representatives of the Red Cross appeared before the Board of Trustees of the American Medical Association relative to the establishment of a national blood program by the Red Cross. The proposed program was to establish a system to furnish whole blood and blood derivatives throughout the country. The Board of Trustees agreed to recommend approval in principle of the Red Cross plan for the establishment of a national blood program with the understanding that the operation should be maintained on a community level with the approval of the county medical societies concerned. The matter was referred to the House of Delegates, and the action of the Board was affirmed by the House of Delegates in June of that same year. Launching of this program by the Red Cross created many unseen problems requiring a considerable degree of attention, exercise of diplomacy, and formulation of principles and policy by the Board of Trustees, the A. M. A. Committee, and the House of Delegates. Criticism of the Red Cross Regional Blood Bank program came from many sources; after considering these criticisms in June, 1948, the House of Delegates reaffirmed its previous action of approval but defined what was meant by approval in principle in the following words:

"Realizing the possibility of a national emergency requiring large amounts of blood in the treatment of civilian and military casualties and realizing the unique position of the American Red Cross in disaster relief, your committee is of the opinion that no change should be made at this time in the 'approval in principle' of the participation of the American Red Cross in the national blood program voted at the Interim Session in January 1948.

"However, your committee would call attention of the House to the fact that long before the Red Cross entered this field of medical practice many previously established blood banks had been operating successfully and adequately under strictly local supervision and had rendered invaluable services to the community. To disturb such independent local units would, in the opinion of your committee, be unwise and disastrous, for they have repeatedly demonstrated their ability to meet local and regional needs. Furthermore, they have demonstrated the practicability of free enterprise and local initiative.

"From the testimony presented at the several hearings before your reference committee, it is quite evident that there has been confusion and misunderstanding between local chapters of the Red Cross and the medical profession at local levels.

"It is the opinion of your reference committee that the 'Approval in Principle' be construed as follows: First, local control must be by the county medical society. Second, the local medical society should be the initial contact in the contemplation of inauguration of a new blood bank. Third, no publicity nor news releases shall be released except by mutual consent of the local county medical society and the local chapter of the American Red Cross. Fourth, difference of opinion in establishment or operation of a blood bank in either administrative or technical detail shall be arbitrated at state levels by joint committees from the state medical society and the American Red Cross."

PRINCIPLES REGARDING BLOOD SUPPLY AND BANKING

In the period between the formation of the liaison committee in 1948 and the formation of the Blood Foundation in 1955, the Board of Trustees on recommendations from the Committee on Blood has requested the House of Delegates to adopt certain basic principles regarding the supply of blood and blood banking: 1. The primary interest of physicians in relation to blood and blood banking is to secure the widest, most efficient and economical supply of safe usable blood and its derivatives for the American people. 2. In establishing blood-banking systems the principle of local determination by county medical society endorsement is desirable. 3. Blood replacement responsibility is regarded as a problem of the family of the recipient, his friends, and various organizations of which he is a member, as well as the community. 4. The interbank exchange of blood on a unit-for-unit basis is felt necessary to develop an integrated national system of blood banks. 5. Nonprofit operation of blood banks but with service cost borne by the patient has been repeatedly emphasized. Possibly restatement of the words used in the June, 1952, report accepted by the House of Delegates will be most clarifying: "Since blood is derived from human beings only, our aim should continue to be directed at having no profit from trafficking in whole blood itself; however, all services rendered cost something and are paid for by or on behalf of every recipient of such services. The service charge should cover all costs of the operation including depreciation and expansion reserves, but the realization of profit for the support of other institutional needs should be discouraged."

In the formulation of the bylaws of the Blood Foundation the Committee on Blood has fought for and has succeeded in having included all of the principles adopted by the House of Delegates with but one modification. While the unit-for-unit exchange of blood between blood banks is accepted as the principle, it is recognized that because of the perishable nature of blood there is a certain percentage of loss in all blood banks. The larger the blood bank the lower this percentage of loss would be, although there is an irreducible minimum. Smaller d banks because of their lesser volume and because of the ssity for maintaining a supply of all types of blood en- ter a larger percentage loss. Therefore it was recognized he board of directors of the Blood Foundation that some stment must be made in the system of unit-for-unit ex- ge because replacement of a borrowed unit of processed d to a small bank by a larger bank actually involves less stment on the part of the large bank. This matter is pres- under consideration by a special committee appointed by resident of the Blood Foundation.

PROGRAM

he program of the Blood Foundation is entirely voluntary its success or failure will depend upon the degree of co- ation it will receive from the blood-banking facilities of the ted States. There are many attendant problems to be solved the board of directors in this trying, occasionally vexing, field.

he leadership furnished by the Committee on Blood in these tiations with the American National Red Cross, American pital Association, American Society of Clinical Pathologists, American Association of Blood Banks is probably best sted to by the fact that the Chairman of the Committee on d, Dr. Leonard Larson, has served as chairman of the joint tiating committees and has now been elected the first presi- of the Blood Foundation. This in no way should be con- ed as deprecation of the efforts of the representatives of the erican National Red Cross, the American Hospital Associ- n, the American Society of Clinical Pathologists, and the erican Association of Blood Banks. All representatives dur- these meetings have exhibited high-minded principle and arnest desire to negotiate a workable solution to the prob- s of blood banking. Acknowledgment too should be made ormer members of the Committee, Drs. William A. Coven- James Q. Graves, James Stevenson, and especially the ner co-chairman Herbert Ramsey for their devoted unselfish ice.

fficers and directors of the Blood Foundation are Leonard Larson, M.D., president; Merlin L. Trumbull, M.D., vice- ident; Karl S. Klicka, M.D., treasurer; and David N. W. nt, M.D.; Donald H. Kaump, M.D.; Walter B. Martin,).; James J. Griffitts, M.D.; Mr. Charles H. Kellstadt; Edwin rosby, M.D.; and Frank W. Konzelmann, M.D.

V TELEVISION PROGRAM ON MEDICAL RESEARCH

Medical Horizons," a new half-hour television series, pre- ed by Ciba Pharmaceutical Products, Inc., in cooperation the American Medical Association, will be premiered on nday evening, Sept. 12, over ABC-TV. The new documentary es will present specific accomplishments in the field of licine brought about by the teamwork of modern medical arch, education, and practice. The program will be presented h Monday from 9:30 to 10:00 p. m., New York time, on a work of 45 ABC-TV affiliated stations for a minimum of 26 ks. Stations in the Pacific and Mountain time zones will eive the program on a two-week delayed basis via Kinescope . Emanating via live remote telecasts from medical institu- s and research centers, the series will be packaged by the Walter Thompson Company under producer-director Fred ney. "Medical Horizons" will be under the supervision of William T. Strauss of Ciba.

. WERMER LEAVES FOR NEW POST

r. Paul L. Wermer, who has been with the A. M. A. dur- the past six years as Secretary of the Committee on Re- rch and the Committee on Blood, left July 15 to take a posi- as vice-president and director of product development for rner-Chilcott Laboratories, Morris Plains, N. J. As Secre- y of the Committee on Research, Dr. Wermer assisted in dies of breast cancer, worked on various studies in connection h diabetes and pregnancy, and established a registry for blood crasias; he presently is engaged in setting up a registry for orting toxic reactions to therapeutic agents.

FEDERAL MEDICAL LEGISLATION

First Session, 84th Congress

National Hospital Week

Senator Hill (D., Ala.) and Senator Thye (R., Minn.), in S. Con. Res. 23, and Congressman Priest of Tennessee, in H. Con. Res. 113, would have Congress request the American people to "cooperate in a voluntary effort to observe National Hospital Week." These measures were referred favorably and passed and signed by the President. These bills were handled in the Senate by the Committee on Public Welfare and in the House by the Interstate and Foreign Commerce Committee.

Federal Aid to State Soldiers' Homes

Congresswoman Rogers (R., Mass.), in H. R. 5378; Congressman Ford (R., Mich.), in H. R. 5564; Congressman Forand (D., R. I.), in H. R. 5930; Senator Langer (R., N. D.), in S. 1780; and Senator Green (D., R. I.), in S. 1916, propose to require that at least one-half of the beds of each state soldiers' home be available for domiciliary care, if federal subsidies are obtained. The Senate measures were referred to the Committee on Labor and Public Welfare, the House measures to the Committee on Veterans' Affairs and the Committee on Armed Services.

Graduate Traineeship for Nurses

Congressman Bolton (R., Ohio), in H. R. 648, would authorize the surgeon general of the Public Health Service to provide traineeships for graduate professional nurses for training to teach in the various fields of nurses' training or to serve in an administrative or supervisory capacity in the various fields of nursing. This bill was referred to the Interstate and Foreign Commerce Committee.

Veterans Chiropractic Treatment

Senator Magnuson (D., Wash.), in S. 1768, proposed to extend chiropractic treatment through the Veterans Administration to veterans. His bill states: "That whenever any person is entitled by law or regulation to receive medical care by or through the Veterans' Administration, he shall, if he so elects, have the right to receive chiropractic care and the Chief Medical Director shall make available the services of qualified chiropractors." This bill was referred to the Committee on Labor and Public Welfare.

Lengthening Presumption of Service Connection for Arthritis, Psychoses, and Multiple Sclerosis

Congressman Henderson (R., Ohio) has introduced, in H. R. 5719, a measure that would "amend the Veterans' Regulations to provide that arthritis, psychoses, or multiple sclerosis developing a 10 per centum or more degree of disability within three years after separation from active service shall be presumed to be service-connected." The present presumption period for arthritis is one year, for psychoses two years, and multiple sclerosis two years. This measure was referred to the Veterans' Affairs Committee.

Presumption of Service Connection for Holders of Purple Heart

Congressman Siler (R., Ky.), in H. R. 5667, would amend the Veterans' Regulations to provide that "if a person has been awarded the Order of the Purple Heart and is not otherwise suffering from a service-incurred or service-aggravated disease or disability, 10 per centum or more in degree, he shall be deemed to be suffering from such a disease or disability, 10 per centum in degree." This would apply only to persons with the Order of the Purple Heart after the enactment of the proposed legislation. This bill was referred to the Committee on Veterans' Affairs.

Practical Nurse Training

Congressman Huddleston (D., Ala.) has introduced an identical measure with S. 929, reported in The Journal, April 30, 1955, page 1618. This will amend the Vocational Education Act to establish a training program for practical nurse and auxiliary personnel under the Commissioner of Education in the Department of Health, Education, and Welfare. This bill was referred to the Committee on Education and Labor.

Prepared by the Washington Office of the American Medical Association.

MEDICAL NEWS

CALIFORNIA

Physicians' Orchestra.—A Physicians' Symphony Orchestra is being organized in San Francisco under the conductorship of Mr. Murray Graitzer. The first meeting was held in the auditorium of the San Francisco Medical Society's headquarters June 7. For information, call Dr. Charles P. Lebo, YUkon 6-4370.

Health Department Needs Physicians.—The Los Angeles City Health Department announces the availability of two administrative posts for physicians with public health experience and several positions in clinical medicine. Applications are being received by the commissioners of the board of health for the position of medical director, a post involving the direction of communicable disease control, maternal and child health, adult health, laboratories, and public health nursing. Salary range is from $797 to $992 a month. The department is seeking also a qualified epidemiologist with formal training in public health, special experience in communicable disease control, and administrative abilities. This position pays $715 to $889 a month. Openings for chest specialists for clinical duties in the tuberculosis control service are available at salaries ranging from $608 to $755. None of these positions requires a competitive Civil Service examination. Applicants will be interviewed and appointed on the basis of training, background, and ability. For information, qualified physicians may contact Dr. Hamlet C. Pulley, Executive Officer, Los Angeles City Health Department, 111 E. First St., Los Angeles 12.

CONNECTICUT

State Medical Election.—The Connecticut State Medical Society recently elected Drs. Oliver L. Stringfield, Stamford, president; Ralph T. Ogden, Hartford, president-elect; John D. Booth, Danbury, first vice-president; John F. Kilgus, Litchfield, second vice-president; and reelected Drs. Creighton Barker, New Haven, executive secretary; Frank H. Couch, Cromwell, treasurer; and Stanley B. Weld, Hartford, editor of the *Connecticut State Medical Journal*. At a special ceremony during the annual dinner, 50-year pins were awarded to Drs. David R. Lyman, Wallingford, Harry C. Clifton, West Hartford, and Irwin Granniss, Northford.

IDAHO

Rheumatic Fever Program.—A $100,000 free penicillin program to curb rheumatic fever in Idaho was recently approved by the Idaho Heart Association and Idaho State Department of Public Health, which will share the costs equally and provide tablets to physicians for use in the medically indigent. The action was taken at the annual scientific assembly of the Idaho Heart Association, where the following officers were elected for the coming year: Dr. Harvey A. Hatch, Idaho Falls, president; Dr. Luther C. Thompson, Twin Falls, president-elect; Dr. Joseph Saltzer, Nampa, vice-president; Dr. Paul R. Sharick, Boise, secretary; and Mr. William A. Goodall, Boise, treasurer.

ILLINOIS

Personal.—Dr. Werner Tuteur, clinical director at Elgin State Hospital, Elgin, has been given a grant-in-aid of $3,000 by Smith, Kline and French Pharmaceutical Company, to investigate further possibilities of Thorazine and reserpine on highly disturbed psychotic patients.

Epilepsy in Industry.—The Illinois Epilepsy League has initiated a drive to encourage wider employment of persons with epilepsy through its sponsorship of an Industry Committee for Employment, consisting of industrialists, business men, and the pres
At an Epilepsy in Industry Conference in Chicago on May 2
a panel discussion, "The Nature of the Problem," was presen
by Dr. Frederick W. Stamps, University of Illinois, Chicago, wh
discussed the medical aspects; Dr. Edward D. Schwade, Milwaukee, who covered the social and medicolegal phases; an
Miss Virginia Gibson, of the Division of Services for Crippl
Children of the State of Illinois, who related the problem t
public health. At the luncheon session the Hon. Maxwell M
Rabb, Washington, D. C., Secretary to the President's Cabinet,
stressed the social and economic importance of providing jo
opportunities for rehabilitated workers with chronic disorders o
other handicaps, and Dr. Abe B. Baker, Minneapolis, chairman
of the Committee for Research in Neurological Disorders
explained the process of restoring the neurologically disable
to productivity. The afternoon session was devoted to employment, with a panel discussion of "Epilepsy in Industry," in which
Dr. Frederic A. Gibbs of the Consultation Clinic on Epileps
at the University of Illinois, Chicago, and Dr. Joseph H. Chiver
medical director of the Crane Company, Chicago, spoke o
medicine and on industrial medicine respectively. Dr. William G
Lennox, Boston, was cited for a lifetime of teaching, researc
and leadership in epilepsy. Dr. Nicholas P. Dallis, Toledo, Ohi
who recently devoted many weeks to a dramatic exposition
epilepsy in his syndicated comic strip, "Rex Morgan, M.D.
was named for his outstanding contribution to public educatio

Chicago

Alumni Honored.—At the annual alumni dinner of the Medi
Alumni Association, University of Chicago School of Medici
June 9, Dr. Russell M. Wilder, Rochester, Minn., was present
with the Gold Key of the Medical Alumni Association, and D
Paul C. Bucy, Chicago, and Dr. David Bodian, Baltimo
received Distinguished Service awards.

Plastic Surgery of Head and Neck.—The American Otorhi
logic Society for Plastic Surgery announces its second gradu
course in plastic surgery of the head and neck Oct. 7-9 at
Morrison Hotel. The course will be limited as to the num
of participants, who will be recognized surgeons speciali
exclusively in otolaryngology, ophthalmology, and plastic s
gery of the head and neck. For information, write Dr. Le
Joel Feit, Secretary, 66 Park Ave., New York 16.

New Vice-President at University.—Herbert E. Longeneck
Ph.D., dean of the graduate school at the University of Pi
burgh since 1946, has been appointed vice-president of t
University of Illinois in charge of the Chicago Professio
Colleges to fill the post vacant since July, 1953. Dr. Longenec
will be administrative head of the university's colleges of me
cine, dentistry, and pharmacy, graduate college in Chica
school of nursing, research and educational hospitals, clini
institutes, and other health science units at the West Side Medi
Center. Dr. Longenecker served as a graduate assistant a
later as an instructor in Pennsylvania State College from 19
to 1936; National Research Council Fellow at the Universi
of Liverpool, England, from 1936 to 1937, University
Cologne, Germany, in 1937, Queen's University, Canada,
1938; and then came to the University of Pittsburgh, where h
posts have included a professorship of biochemistry and a d
rectorship of the Buhl Foundation Project.

IOWA

Series of Medical Forums.—A series of five medical forums w
recently presented in Davenport under the joint sponsorship o
the Scott County Medical Society and Davenport Newspape
Inc. The opening and closing meetings were "for women only
sessions, and the others dealt with problems of dentistry, psychiatric treatment, and heart disease. About 2,000 women attende

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

closing session, at which Dr. Walter J. Balzer served as lerator for a panel that included Drs. Arline M. Beal, Walter oley Jr., Merrill M. Benfer, and Howard A. Weis, Daven- . The Iowa State Medical Society presented the newspapers its first Community Service awards. A second series of th forums is projected.

SAS

pensation Law Amended.—The Kansas Workmen's Com- ation Law has been amended to provide treatment of an red workman in the total amount of $2,500 and extension he 120 day limitation on medical treatment for a longer od of time in extreme cases, at the discretion of the com- ioner. The amendment provides also that the unreasonable sal of the workman to submit to an operation for surgical ir of a traumatic hernia shall deprive such workman of any fits under the act, except that in the event such hernia is erable, compensation shall be paid at the rate of 60% of average weekly wage during 12 weeks. The physician ex- ning an employee for an employer is required to furnish employee, on request, and within 15 days after such nination, with a copy of the identical medical report fur- ed the employer.

INE

e Medical Election.—Newly elected officers of the Maine lical Association include Dr. Martyn A. Vickers, Bangor, ident; Dr. Armand Albert, Van Buren, president-elect; and ner M. Kennard, Portland, secretary-treasurer.

liology for Industry.—Colby College, Waterville, will present third annual Course in Industrial Deafness Aug. 7-13. The rse, which will be given for 20 participants, will train person- in conducting conservation of hearing programs in noisy istries. Dr. Frederick Thayer Hill will be director of the rse. Registrants will live on the college campus. Tuition fee 200 includes board and room. Applications should be made Ir. William A. Macomber, Director, Division of Adult Edu- on and Extension, Colby College, Waterville.

W YORK

demy of Preventive Medicine.—The New York State demy of Preventive Medicine was organized at a meeting in falo May 11. Dr. Vivian A. Van Volkenburgh, Albany, was ted president; Dr. Franklin M. Foote, New York, president- t; Dr. Morton L. Levin, Albany, vice-president; Dr. Walter Levy, Albany, secretary-treasurer; and Drs. Joseph H. naman, Garden City, Michael Antell, New York, and Milton ly, Hornell, directors for three year, two year, and one year ns respectively. Membership is limited to physicians who diplomates of the American Board of Preventive Medicine, ding or employed in New York State. Qualified applicants eligible for charter membership by application until Dec. 31, 55. After that date, eligible applicants can be elected to mbership. Forms for charter membership may be secured m Dr. Walter C. Levy, Secretary-Treasurer, New York State ademy of Preventive Medicine, 353 Broadway, Albany.

rsonal.—Dr. Freeman S. O'Brien has resigned as health officer the village of Wappingers Falls because of ill health, and . Albert R. Scafuri, assistant health officer during the recent ence of Dr. O'Brien, has been appointed health officer.——— . Giles F. Filley, formerly director of the department of ysiology, Trudeau-Saranac Institute, Trudeau, will join the partment of medicine at the University of Colorado Medical nter, Denver, Sept. 1. Dr. Filley will also serve as clinical ysiologist at the Colorado Foundation for Research in berculosis.———Dr. James A. Halsted has been appointed chief professional services at the Veterans Administration Hospital, racuse, and associate professor of medicine at the State iversity of New York College of Medicine at Syracuse. He s formerly a member of the staff at the Veterans Administra- n Hospital in Los Angeles and at the faculty of the Univer- y of California at Los Angeles Medical Center.———Dr. C. uart Welch, associate professor of surgery, and Dr. Ralph D. lley, instructor in surgery, Albany Medical College, read papers on new advances in surgery before the third Medical Society Congress, held in Rabat and Casablanca, Morocco, April 12-16, under the sponsorship of the Morocco Medical Society.

New York City

Appointments for Dr. Sheehan.—Dr. Donal Sheehan, acting director of the New York University-Bellevue Medical Center since 1951, was recently named dean of the College of Medicine and of the Postgraduate Medical School and deputy director of the medical center—duties that had been shared by Dr. Currier McEwen, dean of the medical college, and Dr. Robert Boggs, dean of the Postgraduate Medical School. Dr. Sheehan assumed his new responsibilities on July 1, when, at his own request, Dr. McEwen returned to teaching and Dr. Boggs' resignation became effective. Dr. Sheehan was acting dean from 1943 to 1945.

Gift for New Library.—An anonymous gift of $100,000 has been made for the new library at New York Medical College, Flower and Fifth Avenue Hospitals. The library, part of the six-story building being constructed on 105th Street off Fifth Avenue by the college as the first step in the million dollar expansion program, will replace the present medical library on the second floor of the college building on Fifth Avenue and 106th Street. The library will be integrated with the Flower-Fifth Avenue Hospital record library, so that clinical studies can easily be made of case histories in conjunction with textbooks and medical journals. The hospital case histories will be on microfilm. A room will be set aside in the library for audiovisual aids, including a microfilm projector, motion picture projector and screen, lantern slides, and tape recorders. A periodical room and a second study room will complete the library.

OHIO

Course on Occupational Skin Problems.—The Institute of Industrial Health of the University of Cincinnati announces that the course of instruction in occupational skin problems will be presented Oct. 10-14. The program will be divided into three daily sessions—morning lectures and clinical demonstrations, afternoon field instruction in industrial plants, and evening panel discussions. Physicians interested in attending the course should write to Secretary, Institute of Industrial Health, Kettering Laboratory, Eden and Bethesda avenues, Cincinnati 19. Attendance will be limited.

Personal.—Dr. Walter J. Zeiter, assistant to the executive director of the Cleveland Clinic Foundation, was recently named medical coordinator, with the responsibility of coordinating the medical and surgical services with the administrative departments. Dr. Zeiter, who is president of the National Association of Clinic Managers, joined the staff of the Cleveland Clinic Foundation in 1937 as head of the department of physical medicine and rehabilitation and established the foundation's training school for physical therapists. He has been a member of the A. M. A. Council on Physical Medicine and Rehabilitation since 1951.

TEXAS

Chauncey Leake Goes to Ohio State.—Chauncey D. Leake, Ph.D., executive director, University of Texas Medical Branch at Galveston, has been appointed assistant dean of the college of medicine and professor of pharmacology at Ohio State University, Columbus. Dr. Leake has been at the Texas Medical Branch since 1942, when he was named vice-president. He will assume his new duties Sept. 1, succeeding Dr. John A. Prior, who asked to be relieved of this position to devote full time to teaching, research, and patient care in the department of medicine in which he is a professor and director of the division of chest diseases. Dr. Leake has taught physiology and pharmacology at the University of Wisconsin in Madison and at the University of California, Berkeley-San Francisco, where he served as lecturer in medical history and librarian of the medical school. He is on the editorial board of the *Archives of International Pharmacology* and is chairman of the committee of problems of alcohol of the National Academy of Sciences.

WASHINGTON

Course in Paralytic Respiratory Failure.—A postgraduate course in the Management of Acute Paralytic Respiratory Failure will be presented at the University of Washington School of Medicine, Seattle, Aug. 19. Treatment methods for poliomyelitis, polyneuritis, nervous system poisoning, and related disease states will be discussed and new equipment demonstrated. Dr. Russell R. de Alvarez, professor of the department of obstetrics and gynecology, will serve as chairman for the course, which will be sponsored by the University of Washington School of Medicine, Washington State Medical Association, Washington State Department of Health, and by a grant from the National Foundation for Infantile Paralysis. The course (fee, $10) is open to graduates of medical schools approved by the Council on Medical Education and Hospitals of the American Medical Association. Checks made payable to the University of Washington should accompany the application and be addressed to the Division of Postgraduate Medical Education, University of Washington School of Medicine, Harborview Hospital Annex, 325 Ninth Avenue, Seattle 4.

WEST VIRGINIA

Personal.—Drs. Walter L. Barbour, Whitesville, Merwin B. Moore, Huntington, and Ozro H. Bobbitt, Charleston, have been elected to honorary life membership in the West Virginia State Medical Association.

State Medical Meeting.—The West Virginia State Medical Association will hold its annual meeting Aug. 18-20 at the Greenbrier, White Sulphur Springs, under the presidency of Dr. James P. McMullen, Wellsburg. The convention will be preceded by the Freedom of Information Clinic Wednesday evening. The clinic, with its six member panel, composed of representatives of the press and the medical profession, and its audience participation, supplants the public relations meeting customarily held. It will be addressed by Mr. Leo E. Brown, Chicago, A. M. A. Director of Public Relations, and Mr. Peyton B. Winfree Jr., executive editor of the *News and Advance*, Lynchburg, Va. All general sessions will be held in the theater of the newly completed air-conditioned convention unit. Sound motion pictures on scientific subjects will be shown each morning at 8:15. The convention will open Thursday at 9:15 a. m. The following symposium on hypertension will be presented by members of the faculty of Duke University School of Medicine, Durham, N. C.:

Etiology and Surgical Treatment of Hypertension, Keith S. Grimson.
Pharmacology of Drugs Used in Hypertension, James P. Hendrix.
Medical Therapy of Hypertension, Edward S. Orgain.

A panel discussion and question and answer period will follow the symposium. Dr. Robert U. Drinkard Jr., Wheeling, will serve as moderator at this session. The following program is scheduled for Friday morning, with Dr. Richard E. Flood, Weirton, as moderator:

Present-Day Problems Concerned with Antibiotic Therapy, Chester S. Keefer, Boston.
Differential Diagnosis of Hip Joint Disease in Children, Marcus J. Stewart, Memphis, Tenn.
Management of Intractable Peptic Ulcer, Charles M. Caravati, Richmond, Va.

The final general session, Saturday morning, will have as moderator Dr. Richard W. Corbitt, Parkersburg, who will preside over the following program:

Malignant Lesions of the Colon, Isidor S. Ravdin, Philadelphia.
Injuries of the Ureter and Bladder During Pelvic and Colon Surgery, John L. Emmett, Rochester, Minn.
The Anesthesiologist in the Medical-Surgical Team, Curtiss B. Hickcox, Hartford, Conn.

The section on urology has scheduled a symposium for Friday afternoon, when guest speakers will be Dr. Elmer Hess, Erie, Pa., President of the American Medical Association, and Dr. John L. Emmett, professor of surgery at the Mayo Foundation Graduate School of the University of Minnesota, Rochester. Dr. Hess will also address the final meeting of the house of delegates Saturday, 3:30 p. m. His subject will be "Medical Crisis." Dr. Isidor S. Ravdin, Philadelphia, guest speaker at the meeting of the section on surgery Friday afternoon, will discuss "Gastric Ulcer and Gastric Cancer," and the guest speaker at the meeting of the section on orthopedic surgery, which will be held simultaneously, will be Dr. Marcus J. Stewart, Memphis, Tenn., who will have as his topic "Treatment of Fractures of the Hip with Non-Union."

Numerous social events have been planned. These will include the annual cocktail party, which will be given under the sponsorship of the Kloman Instrument Company, Inc., of Charleston, Saturday, 7:30 p. m.; and a "Gay Nineties" party, which has been arranged by the Woman's Auxiliary for Friday, 10 p. m. An innovation of the annual golf tournament will be a separate tournament for guest physicians and representatives of technical exhibits.

WYOMING

State Medical Election.—The Wyoming State Medical Society recently elected Dr. Russell I. Williams, Cheyenne, president Dr. Joseph S. Hellewell, Evanston, president-elect; Dr. Harla B. Anderson, Casper, vice-president; Dr. Benjamin Gitlitz Thermopolis, secretary; and Dr. Carleton D. Anton, Sheridan treasurer.

GENERAL

Cancer Research Project.—A joint attack on malignant mela noma has been organized between the University of Texas M. D Anderson Hospital and Tumor Institute in the Texas Medica Center, Houston, and the University of Oregon Medical Schoo Portland. The "Melanoma Study Section," organized in Decem ber, 1954, is the second such research group organized by th University of Texas M. D. Anderson Hospital. The first was th "Cancer Eye Study Section," for the study of squamous ocul carcinoma in cattle. The National Cancer Institute has recom mended approval of grants for the study section.

Heart Sound Tape Library.—A library of tape-recorded hea sounds and murmurs is being established by the American Hea Association for use in undergraduate and postgraduate medic education. The association's committee on auscultatory ph nomena announces that the library will include 10 teaching ree and 34 different heart sounds and murmurs available in loc form at 1⅞ and 7½ in. per second. The tapes are expected be ready for circulation around Sept. 1. Information on use the tapes, as well as descriptive materials on their content, ca be obtained from the Medical Division, American Heart Assoc ation, 44 E. 23rd St., New York 10.

The Lalor Foundation Awards.—The Lalor Foundation (44 Lancaster Pike, Wilmington, Del.) announces awards up $1,100 each to 23 faculty members of American and Canadia colleges and universities for 1955 summer research and study i the biological sciences. The Marine Biological Laboratory Woods Hole, Mass., has announced appointment of one Senio Lalor Fellow and six Postdoctorate Lalor Fellows for the sum mer of 1955 under its agreement with the Lalor Foundatio It is anticipated that announcement will be made in Octobe regarding the next series of awards to be offered to college an university faculty members for research in the biological scienc during the summer of 1956.

Request Names of Multiple Sclerosis Victims.—A nationwid search is being conducted by some 2,750 JayCee chapters i cooperation with the National Multiple Sclerosis Society an its 70 chapters, to reach an estimated 250,000 unknown multipl sclerosis victims and put them in touch with the national society Physicians and multiple sclerosis sufferers and their relatives ar urged to advise the National Multiple Sclerosis Society of th names and addresses of all multiple sclerosis victims. The iden tity of any person reported to the society will be kept confi dential. Dr. Hans H. Reese, Madison, chairman of the medical advisory board of the National Multiple Sclerosis Society, will provide information for physicians interested in the search for victims. Interest of the JayCees in the program stems primarily from the fact that the disease is reported to strike 1 in every 400 young adults. The JayCee age group is from 20 to 35.

ew Periodical on Alcohol Problems.—The International In- tute for Research on Problems of Alcohol has announced that official organ will be the *International Journal of Alcohol d Alcoholism*, which will be published three times annually. e new periodical will present surveys of the problems, achieve- ents, and statistics of individual countries, beginning with rveys on Austria and Canada in the June issue. The journal 'll also feature current and classified bibliographies of the orld literature. The journal will publish in English, French, erman, Italian, and Spanish. The international subscription ice is 30 shillings; in the U. S. A., $6. Editorial correspondence ould be addressed to H. Pullar-Strecker, M.D., Wyke House, leworth, Middlesex, England. Business correspondence should addressed to the publishers, Blackwell Scientific Publications, Broad St., Oxford, England, or to the American publishers, harles C Thomas, 301 E. Lawrence Ave., Springfield, Ill.

ardiac Research Grants.—Applications by scientific investi- tors for support of research to be undertaken during the year ginning July 1, 1956, are being accepted by the American eart Association. The application deadline for research fellow- ips and established investigatorships is Sept. 15 and for grants- -aid, Nov. 1. Established investigatorships are awarded for riods of up to five years, subject to annual review, in amounts nging from $6,000 to $9,000. Research fellowships are awarded young men and women with doctoral degrees for periods of e to two years to enable them to train as investigators under perienced supervision (annual stipends, $3,500-$5,600). Grants- -aid are made in varying amounts, not to exceed $10,000, to perienced investigators to provide support for specific projects. areer investigators are selected by the research committee, ther than by application. Information may be obtained from e Medical Director, American Heart Association, 44 East rd St., New York 10.

adiological Conference.—The 17th Midsummer Radiological onference of the Rocky Mountain Radiological Society will nvene at the Hotel Shirley-Savoy, Denver, Aug. 18-20, under e presidency of Dr. Alfred M. Popma, Boise, Idaho. Guest eakers and their first presentations include:

Warren W. Furey, Chicago, The Radiologist—Quo Vadis?
Higdon B. Elkins, Iowa City, Use of Radioactive Gold Intra-Abdominally in the Treatment of Carcinoma of the Ovary.
George Z. Williams, Bethesda, Md., Effects of X-Ray on the Mechanism of Carcinogenesis in the Liver.
Isadore Meschan, Little Rock, Ark., Review of Cobalt 60 and Its Interstitial Uses.
John W. Hope, Philadelphia, Roentgen Fables of Infants and Children. Part I: The Unfilled Chest, the Bulgy Neck and the Shadowy Belly.

ngle author presentations by invitation will include:

Semiconductors in the Field of Radiology, E. Dale Trout, Ph.D., Milwaukee.
Clinical Stationary Field Therapy with a Cobalt 60 Unit. Part I and Part II, Gilbert H. Fletcher, Houston, Texas.
Radiological Demonstration of Tumors of Sinuses and Nasopharynx, John P. McGraw, Houston, Texas.
Some Internal Abdominal Hernias, Cyrus W. Partington, Denver.
New Concept of Treatment of Breast Cancer, Bertram V. A. Lowbeer, San Francisco.
Cerebral Angiography in Intracranial Vascular Lesions, Homer G. McClintock, Denver.
Translumbar Aortography in Disease of the Aorta, Robert V. Elliott, Denver.
Uterosalpingography: Studies in Sterility, Thomas M. Fullenlove, San Francisco.

uest speakers will participate at the luncheon sessions each ay. A guest speakers' dinner (informal) Thursday, 6 p. m., will e followed by a joint meeting with the Denver Medical Society Dr. Cyrus W. Anderson, Denver, president). Dr. Furey, who president of the American College of Radiology, will serve s moderator for a session on roentgen film diagnoses with rs. Meschan, Hope, Ralph C. Moore, Omaha, and John P. IcGraw, Houston, Texas, as panelists. The Colorado Radio- ogical Society will be host at the social hour following the cientific session. The banquet (strictly informal) is scheduled or Friday, 7:30 p. m., after a social hour. Dr. Popma will reside, and Dr. John S. Bouslog, Denver, will serve as toast- naster. Saturday will be devoted to a trip to Central City, with linner at the Teller House, 6 p. m., and the play, "Bus Stop," t the Central City Opera House, 8:15 p. m.

Prevalence of Poliomyelitis.—According to the National Office of *Vital Statistics*, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

	July 16, 1955		
Area	Paralytic Type	Total Cases Reported	July 17, 1954, Total
New England States			
Maine	1	1	1
New Hampshire	..	..	..
Vermont	..	..	..
Massachusetts	35	52	9
Rhode Island	2	5	..
Connecticut	1	5	10
Middle Atlantic States			
New York	13	43	27
New Jersey	..	16	21
Pennsylvania	..	10	12
East North Central States			
Ohio	3	21	51
Indiana	2	7	10
Illinois	9	29	34
Michigan	9	31	54
Wisconsin	7	14	3
West North Central States			
Minnesota	1	2	6
Iowa	2	14	47
Missouri	2	10	17
[illegible]	..	4	3
[illegible]	..	..	6
Nebraska	7	6	33
Kansas	1	8	30
South Atlantic States			
Delaware	..	..	2
[illegible]	1	2	6
[illegible]	2	2	4
Virginia	3	8	13
West Virginia	1	1	6
North Carolina	2	20	13
South Carolina	3	15	21
Georgia	5	6	32
Florida	1	10	59
East South Central States			
Kentucky	4	10	25
Tennessee	3	9	24
Alabama	3	3	12
Mississippi	3	15	32
West South Central States			
Arkansas	6	11	13
Louisiana	1	3	37
Oklahoma	..	8	51
Texas	36	83	140
Mountain States			
Montana	..	..	..
Idaho	4	6	1
Wyoming	..	..	9
Colorado	2	2	7
New Mexico	2	4	9
Arizona	..	3	20
Utah	..	1	1
Nevada	..	2	2
Pacific States			
Washington	5	7	12
Oregon	4	5	6
California	18	49	122
Territories and Possessions			
Alaska	..	..	6
Hawaii	2	2	3
Puerto Rico	5	5	..
Total	211	572	1,002

Research in Mental Health.—The Ford Foundation has announced an extensive program of support for research in mental health. Programs eligible for such support will include: personality dynamics and development; biological, physiological, and somatic aspects of mental health; social and community aspects; studies in therapy; and children's disorders. The research programs may be located in any qualified institution in the U. S. or abroad. It is estimated that the programs will operate within the range of $50,000 to $150,000 a year and that the average will fall somewhat below $100,000 a year. The criteria to be used in selecting programs for support are: clear relevance for the field of mental health; specific nature and content of the program; past and potential quality of performance of personnel, with special attention to qualifications of the program's leadership; proper organizational arrangements within the institution; provision of research training in connection with the research program; integration of attack on the problem against other disciplines or research approaches, where appropriate; complementary relationship to other research programs in the same or related fields; and no displacement of existing funds. Applicants are asked to submit a full description of their proposed programs of research. Each application should be submitted in eight copies, accompanied by an official letter of submission from the principal administrative officer of the sponsoring institution. Applicants who are unable to submit proposals by Sept. 1 but intend to do so later are asked to send a statement to that effect by that date to the Secretary, Ford Foundation, 477 Madison Ave., New York 22.

Postdoctoral Fellowships.—The award of a second group of postdoctoral fellowships during the current calendar year will be made by the National Science Foundation Oct. 20. Applications will be received through Sept. 12. The postdoctoral fellowships are awarded to U. S. citizens who will begin or continue their studies at the postdoctoral level in the life and physical sciences (including interdisciplinary fields) at any time within one year after the announcement of awards. Selection will be made solely on the basis of ability as shown in academic records, in written evaluation of each individual by faculty advisers or other qualified observers, and in a proposed plan of research. The stipend for National Science Foundation postdoctoral fellowships is $3,400 a year. Dependency allowances are made to all married fellows. A limited allowance to aid in defraying cost of travel will be paid as will tuition and certain fees collected from individuals of similar academic standing. Application materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Ave., N. W., Washington 25, D. C.

FOREIGN

Congress on Anesthesiology.—The World Congress of Anesthesiologists will convene in the Kurhaus at Scheveningen near The Hague (Holland), Sept. 4-10. The subjects of the congress will be (1) the physiological, pharmacological, and clinical aspects of muscle relaxation, hypotension, hypothermia, and artificial hibernation, (2) respiration and circulation, and (3) the teaching of anesthesia.

Symposium on Migraine and Vascular Allergy.—At its second symposium in Basle, Switzerland, July 3-8, the Collegium Internationale Allergologicum had as its main theme "Migraine and Vascular Allergy." The presentations included "Migraine and Other Vascular Headaches" by Dr. Harold G. Wolff, New York, and "Food-Induced Allergic Headaches in Nonmigrainous and Migrainous Individuals" by Dr. William Kaufman, Bridgeport, Conn.

International Pharmaceutical Congress.—The 16th general assembly of the Féderation Internationale Pharmaceutique will convene in London, England, Sept. 19-23. Among the topics for discussion will be: Tests for the Sterility of Pharmaceutical Preparations; Absorption of Medicaments by Various Routes of Administration; Professional Liability and Professional Insurance Against Risks; and Pharmacy of Blood, Blood Products, and Blood Substitutes. The following symposiums have been scheduled: Standardization of Medicinal Plants; Determination of the Active Principles of Drugs and the Unification of Methods of Assay; and Recent Advances in Phytotherapy.

Neuropsychiatric Meetings.—The convention of the German Society of Neurologists and Psychiatrists will be held Sept. 19-22 at the University of Hamburg in Germany. The main subject is the "Motor Apparatus, Its Functions and Mode of Action." A group discussion on "The Training of the Neurologist" is scheduled. On Wednesday at 8 p. m. there will be a session of the Association of German Neurologists. Social events will include opera or the theater, dinner at the Hotel Atlantic, a steamship excursion to Helgoland, excursions through the fort of Hamburg, and visits to various museums. For information write to Dr. Magun, Nervenklinik, Hamburg-Eppendorf, Germany.

Congress on Hematology.—The fifth International Congress of the European Society of Hematologists, organized in cooperation with the German Hematological Society, will be held in Freiburg im Breisgau, Western Germany, Sept. 20-25. Sessions are open to all physicians and scientists interested in hematology. Topics for discussion include: isotopes and cytostatics in hematology; metabolism of iron and copper; neurohumoral regulation of the blood; hepatolienal diseases and their relations to hematology; the heredity of the hemorrhagic diathesis; anticoagulant therapy and prophylaxis of the arterial thrombosis; and hematopoiesis and bone structure. On Sunday there will be a common session on "Biochemistry of the Antibodies" with the Société Internationale de Transfusion Sanguine and the Deutschen Gesellschaft für Bluttransfusionen.

CORRECTION

Urologic Complications of Sickle Cell Disease.—Line 22 in the abstract on sickle cell disease on page 551 of the issue of Feb. 5, 1955, should read: "hormone plays a causal role in the priapism of sickle cell disease," not "a causal role in sickle cell disease."

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

American Medical Association Public Relations Institute, Drake Hotel, Chicago, Aug. 31- Sept. 1. Mr. Leo E. Brown, 535 N. Dearborn St., Chicago 10, Director.

American Association of Nursing Homes, Hotel Muehlebach, Kansas City, Mo., Sept. 19-21. Mr. Ira O. Wallace, P.O. Box 366, New Castle, Ky., Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, The Homestead, Hot Springs, Va., Sept. 8-10. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

American College of Hospital Administrators, Convention Hall, Atlantic City, N. J., Sept. 17-19. Mr. Dean Conley, 620 North Michigan Ave., Chicago 11, Executive Director.

American Congress of Physicial Medicine and Rehabilitation, Hotel Statler, Detroit, Aug. 28-Sept. 2. Dr. Frances Baker, 30 North Michigan Ave., Chicago 2, Secretary.

American Fracture Association, Hotel Fontainebleau, Miami Beach, Fla., Sept. 19-22. Dr. Homer D. Junkin, Paris Hospital, Paris, Ill., Secretary.

American Hospital Association, Traymore Hotel, Atlantic City, N. J., Sept. 19-22. Dr. Edwin L. Crosby, 18 East Division St., Chicago 10, Director.

American Medical Writers' Association, Jefferson Hotel, St. Louis, Sept. 30-Oct. 1. Dr. Harold Swanberg, P.O. Drawer 110, Quincy, Ill., Secretary.

American Physiological Society Fall Meeting, Tufts College, Medford, Mass., Sept. 6-9. Dr. Allan C. Burton, Univ. of Western Ontario, London, Ont., Canada, Secretary.

American Roentgen Ray Society, Palmer House, Chicago, Sept. 20-23. Dr. Barton R. Young, Germantown Hospital, Philadelphia 44, Secretary.

American Society of Plastic and Reconstructive Surgery, Atlantic City, N. J., Sept. 25-30. Dr. Kenneth L. Pickrell, Duke Hospital Durham, N. C., Secretary.

American Veterinary Medical Association, Radisson Hotel and Auditorium, Minneapolis, Aug. 15-18. Dr. J. G. Hardenbergh, 600 South Michigan Blvd., Chicago 5, Executive Secretary.

Biological Photographic Association, Wisconsin Hotel, Milwaukee, Aug. 30-Sept. 2. Miss Jane H. Waters, c/o Pavelle Color, Inc., 533 W. 57th St., New York 19, Executive Secretary.

Clinical Orthopaedic Society, Skirvin Hotel, Oklahoma City, Sept. 30-Oct. 1. Dr. Marcus J. Stewart, 869 Madison Ave., Memphis, Tenn., Executive Secretary.

Colorado State Medical Society, Shirley-Savoy Hotel, Denver, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2, Executive Secretary.

Industrial Health Conference, Shamrock Hotel, Houston, Texas, Sept. 22-23. Dr. Sidney Schnur, 411 Medical Arts Bldg., Houston 2, Texas, Chairman.

Kentucky State Medical Association, Louisville, Sept. 27-29. Mr. J. P. Sanford, 620 S. Third St., Louisville, Executive Secretary.

Michigan State Medical Society, Pantlind Hotel, Grand Rapids, Sept. 26-30. Dr. L. Fernald Foster, 606 Townsend St., Lansing 5, Secretary.

Mississippi Valley Medical Society, Jefferson Hotel, St. Louis, Sept. 28-30. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

Montana Medical Association, Baxter Hotel, Bozeman, Sept. 15-18. Mr. L. R. Hegland, P.O. Box 1692, Billings, Executive Secretary.

National Medical Association, Los Angeles, Aug. 8-11. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

Nevada State Medical Association, Riverside Hotel, Reno, Aug. 18-21. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

New England Health Institute, Colby College, Waterville, Me., Aug. 30-Sept. 1. Dr. Edward W. Colby, City of Portland Health Dept., Portland, Me., Chairman.

New Hampshire Medical Society, Mt. Washington Hotel, Bretton Woods, Sept. 29-Oct. 1. Dr. Warren H. Butterfield, 18 School St., Concord, Secretary.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls, Tex., Sept. 17. Dr. E. C. Bebb, Broad St., Wichita Falls, Tex., Chairman.

Oregon State Medical Society, Hotel Heathman, Portland, Sept. 28-Oct. 1. Dr. Richard R. Carter, 1020 S.W. Taylor St., Portland 5, Secretary.

Pacific Dermatologic Association, Mexico, D. F., Mexico, Aug. 22-24. Dr. Ben A. Newman, 436 N. Roxbury Drive, Beverly Hills, Calif., Secretary.

Pennsylvania, Medical Society of the State of, William Penn Hotel, Pittsburgh, Sept. 18-23. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

Postgraduate Assembly in Endocrinology and Metabolism, Indianapolis, Sept. 26-Oct. 1. Dr. John J. Mahoney, Assistant Dean, Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis 7.

Regional Meetings, American College of Physicians:

Jamestown, N. D., Sept. 10. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

Reno Surgical Society, Reno, Nev., Aug. 18-20. Dr. James R. Herz, 509 Humboldt St., Reno, Nev., Secretary.

Rocky Mountain Radiological Society, Shirley-Savoy Hotel, Denver, Aug. 18-20. Dr. John H. Freed, 4200 East 9th St., Denver 20, Secretary.

Society of General Physiologists, Marine Biological Laboratory, Woods Hole, Mass., Sept. 9-10. Dr. A. M. Shanes, National Institutes of Health, Bethesda 14, Md.

Southwestern Surgical Congress, Muehlebach Hotel, Kansas City, Mo., Sept. 5-7. Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secretary.

U. S. Chapter, International College of Surgeons, Convention Hall, Philadelphia, Sept. 12-15. Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago 10, Secretary.

Utah State Medical Association, Union Bldg., Salt Lake City, Sept. 8-10. Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2, Executive Secretary.

Vermont State Medical Society, Mt. Washington Hotel, Bretton Woods, N. H., Sept. 28-Oct. 1. Dr. James P. Hammond, 337 South St., Bennington, Secretary.

Washington State Medical Association, Olympic Hotel, Seattle, Sept. 11-14. Dr. Frederick A. Tucker, 1309 Seventh Ave., Seattle 1, Secretary.

Western Association of Railway Surgeons, Las Vegas, Nev., Sept. 22-24. Dr. Leo L. Stanley, 1322 Fifth Ave., San Rafael, Calif., Secretary.

West Virginia State Medical Association, White Sulphur Springs, Aug. 18-20. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

FOREIGN AND INTERNATIONAL

Australasian Medical Congress, Sydney, N.S.W., Australia, Aug. 20-27. For information write: Federal Council of the B.M.A. in Australia, 135 Macquaire St., Syndey, N.S.W., Australia.

Canadian Society for the Study of Fertility, Royal York Hotel, Toronto, Ont., Canada, Oct. 6-8. Dr. Earl R. Plunkett, 469 Waterloo St., London, Ont., Canada, Secretary.

Congress of International Association of Limnology, Helsinki, Finland, July 26-Aug. 7, 1956. For information address: Dr. H. Luther, Snellmansgatan 16 C 36, Helsinki, Finland.

Congress of International Society for Research on Anesthesia, Miami Beach, Fla., U.S.A., Mar. 12-15, 1956. For information write: Dr. R. J. Whitacre, 13951 Terrace Road, Cleveland 12, Ohio, U. S. A.

Congress of International Union of Railway Medical Services, Dubrovnik, Yugoslavia, Sept. 19-24. Dr. Jovanovic, Head Office, Yugoslav Railway, Belgrade, Yugoslavia, President.

Congress of International Union Against Venereal Diseases, Naples, Italy, Sept. 25-28. For information address: Prof. Monacelli, University of Naples, Dept. of Dermatology, Naples, Italy.

International Academy of Legal and Social Medicine, Plenary Conference, Genes, Italy, Oct. 13-17. Prof. Domenico Macaggi, *Institut de* Medicine legale, Universite de Genes, Genes, Italy, President.

International Conference of Medical Librarians and Reference Librarians, University Hall, Brussels, Belgium, Sept. 10. For information address: Miss Ch. de Looze, Librarian % Oeuvre Nationale Belge de Defense contra la Tuberculose, 56, rue de la Concorde, Brussels, Belgium.

International Conference on Radiobiology, Cambridge, England, Aug. 14-17. For information write: Dr. Barbara E. Holmes, Dept. of Radiotherapeutics, Univ. of Cambridge, Downing St., Cambridge, England.

International Congress of Allergology, Rio de Janeiro, Brazil, S. A., Nov. 6-13. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7ᵉ, France, *Secretary General.*

International Congress of Angiology and Histopathology, Fribourg, Switzerland, Sept. 2-5. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8ᵉ, France.

International Congress of Criminology, London, England, Sept. 11-18. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

International Congress of European Society of Haematology, Freiburg i,Br., Germany, Sept. 20-24. Prof. Dr. L. Heilmeyer, Hugstetter Strasse 55, Freiburg i,Br., Germany, Chairman.

International Congress of International College of Surgeons, Buenos Aires, Argentina, S. A., Nov. 19-24, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

International Congress of International Society of Bronchoesophagology, Buenos Aires, Argentina, S. A., Oct. 28-29. Dr. Juan Carlos Arauz, Cangallo 4015, Buenos Aires, Argentina, S. A., Secretary General.

International Congress of Librarianship and Documentation, Brussels, Belgium, Sept. 11-18. For information write: Dr. A. C. Breycha-Vauthier, Librarian, United Nations, Geneva, Switzerland.

International Congress of Medical Professional Jurisdiction, Medical Ethics, and Comparative Medical Law, Paris, France, Sept. 30-Oct. 3. Dr. J. R. DeBray, Conseil National de L'Ordre des Medécins, 60, Boulevard Latour-Maubourg, Paris 7e, France, Secretary General.

International Congress of Military Medicine and Pharmacy, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, International Committee of Military Medicine and Pharmacy, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

International Congress of Neo-Hippocratic Medicine, Montecatini, Terme, Italy, May 20-22, 1956. Prof. P. Delore, 13 rue Jarente, Lyon, France, Secretary-General.

International Congress of Neuropathology, London, England, Sept. 12-17. Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London, W.9, England, Secretary.

International Congress of Paediatrics, Copenhagen, Denmark, July 22-27, 1956. Professor P. Plum, Rigshospitalet, Copenhagen, Denmark, President.

International Congress of Physical Medicine, Copenhagen, Denmark, August 20-24, 1956. Dr. B. Strandberg, Kobenhavns amts sygehus i Gentofte, Dept. of Rheumatology and Physical Medicine, Hellerup, Denmark, Honorable Secretary.

International Congress of Radiology, Mexico, D. F., Mexico, July 22-28, 1956. Dr. Jose Noriega, Tepic 126 (2e piso), Mexico, D. F. 7, Mexico, Secretary General.

International Congress on Urinary Lithiasis, Evian, France, Sept. 2-4. Mr. Rossollin-Grandville, Direction Cachet, Evian (Hte-Savoie), France, Secretary General.

International Congress of World Confederation for Physical Therapy, New York, New York, U. S. A., June 17-23, 1956. For information address: Miss Mildred Elson, American Physical Therapy Association, 1790 Broadway, New York 19, New York, U. S. A.

International General Medical Congress, University of Rosario Medical College, Rosario, Argentina, S. A., Nov. 7-12. Dean Jose Imhoff, Santa Fé 3100, Rosario, Argentina, S. A., Chairman.

International Medical Congress, Verona, Italy, Sept. 1-4. For information write: c/o Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

International Office of Documentation of Military Medicine, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

International Physiological Congress, Brussels, Belgium, July 29-Aug. 5, 1956. For information address: Prof. J. Reuse, Faculte de Medicine et de Pharmacie, 115 Boulevard de Waterloo, Brussels, Belgium.

International Society for the Study of Biological Rhythms, Stockholm, Sweden, Sept. 15-17. For information write: Prof. Ture Petrén, Karolinska Institutet, Stockholm 60, Sweden.

International Vitamin E Congress, Cini Foundation, Island of San Giorgio Maggiore, Venice, Italy, Sept. 5-8. Prof. Emilio Raverdino, via Pietro Verri 4, Milano, Italy, Secretary.

Neuroradiologic Symposium, London, England, Sept. 13-17. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

Pan American Congress of International College of Surgeons, Mendoza City, Argentina, S. A., Oct. 22-26. For information address: Secretary, Caseros Av. 2154, Buenos Aires, *Argentina, S. A.*

Pan American Congress of Ophthalmology, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, *Secretary General.*

Pan American Congress on Rheumatic Diseases, Rio de Janeiro and Sao Paulo, Brazil, S. A., Aug. 14-20. For information write: Dr. Waldemar Bianchi, 126 Avenida Franklin D. Roosevelt, Rio de Janeiro, Brazil, S. A.

Pan American Medical Women's Alliance, Santiago, Chile, Mar. 6-13, 1956. For information address: Dr. Eva Cutright, 458 Beall Ave., Wooster, Ohio, U. S. A.

Pan American Medical Social Convention, Bogota, Colombia, S. A., Oct. 15-22. Dr. Leopoldo E. Araujo, Avenida de los Presidentes Num. 506, Apartado 2589, La Habana, Cuba, Secretary.

Venezuelan Congress of Medical Sciences, Caracas, Venezuela, S. A., Nov. 18-26. Dr. A. L. Briceno Rossi, Apartado 4412, Ofic. del Este, Caracas, Venezuela, S. A., Secretary General.

World Congress of Anesthesiologists, Scheveningen, Netherlands, Sept. 5-10. For information write: Mr. W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven, Netherlands.

World Congress on Fertility and Sterility, Naples, Italy, May 18-26, 1956. For information address: Prof. G. Tesauro, S. Andrea della Dame, 19, Naples, Italy.

World Congress of Jewish Physicians, Haifa, Tel-Aviv, Jerusalem, Israel, Aug. 10-17. Dr. Z. Avigdori, P.O.B. 1342, Jerusalem, Israel, Chairman.

World Federation for Mental Health, Istanbul, Turkey, Aug. 21. For information write: Miss E. M. Thornton, 19 Manchester St., London, W.1, England.

World Medical Association, Vienna, Austria, Sept. 20-26. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary General.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part I,* Sept. 6-7. Candidates may file applications at any time, but the National Board must receive them at least six weeks before the date of the examination. New candidates should apply by formal registration; registered candidates should notify the board by letter and forward their fees. Exec. Sec., Dr. John B. Hubbard, 133 South 36th St., Philadelphia 4.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* New York City, Oct. 23-27. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral.* Washington, D. C., Oct. 14-16. Final date for filing application was March 15. Sec., Dr. B. M. Kesten, One Haven Ave., New York 32, N. Y.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Portland, Ore., Sept. 14-16; Chicago. Nov. 30-Dec. 1. *Subspecialties. Cardiovascular Disease.* Chicago, Nov. 30. The closing date for acceptance of applications for gastroenterology was Feb. 1, and for cardiovascular disease the closing date was June 1. Exec. Sec., Dr. William A. Werrell, 1 West Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* New Haven, November. Oral examinations given in Spring and Fall. Final date for filing application for the Spring examination is October 1, for the Fall examination April 1. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Applications for certification for the 1956 Part I examinations are now being accepted. Final date for filing application is Oct. 1. Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Practical Examination.* Chicago, Oct. 9-14. Final date for filing application for 1955 practical examination was July 1, 1954. *Written.* January, 1956. Final date for filing application was July 1. *Practical Examination.* St. Louis, Oct. 20-25. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Final date for filing application for the Part II examination to be given in January 1956 is Aug 15. Sec., Dr. Harold A. Sofield, 116 South Michigan Ave., Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, Oct. 3-7. Final date for filing application is April. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Chicago, Oct. 7-9; and Washington, D. C., Dec. 2-4. Admin. Sec., Mrs. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PLASTIC SURGERY: *Oral and Written.* Philadelphia, Sept. 22-24. Corres. Sec., Miss Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

AMERICAN BOARD OF PREVENTIVE MEDICINE: *Certification in Public Health.* Kansas City, Mo., Nov. 10-12. Sec.-Treas., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore 5.

AMERICAN BOARD OF PROCTOLOGY: *Part II.* Philadelphia, Sept. 17. Sec., Dr. Stuart T. Ross, 131 Fulton Ave., Hempstead, N. Y.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: San Francisco, mid-October; New York City, December. Sec., Dr. David A. Boyd, 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: Chicago, Dec. 4. Final date for filing applications for the fall examination was July 1. Candidates who will complete their training by Dec. 31 will be eligible to appear for this examination. Sec., Dr. B. R. Kirklin, Kahler Hotel Bldg., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Part I.* Centers throughout the United States, in Europe and in the Far East, Oct. 26 and March 28. Closing date for the October examination was July 1 and for the March examination is December 1. *Part II.* Buffalo, Sept. 26-27; Chicago, Oct. 27-28; New York City, Nov. 14-15; St. Louis, Dec. 12-13; New Orleans, Jan. 16-17; Los Angeles, Feb. 13-14; San Francisco, Feb. 16-17; Durham, Mar. 12-13; Boston, May 14-15 and Philadelphia, June 4-5. Sec., Dr. John B. Flick, 255 S. Fifteenth St., Philadelphia 2.

THE BOARD OF THORACIC SURGERY: *Written.* Various Centers, Sept. 9. Final date for filing applications was July 1. Sec., Dr. Wm. M. Tuttle, 1151 Taylor Ave., Detroit 2.

MAGAZINE-TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Monday, August 8

NBC-TV, 9 p. m. EDT. "Medic" presents "The Wild Intruder," a rerun of a story about a young woman who gains courage for a new life after an operation for breast cancer.

Tuesday, August 9

CBS-TV, 10:30 p. m. EDT. "The Search" repeats a program from last season. Filmed at New York University-Bellevue Medical Center, it is titled "Independence for Paraplegics."

MAGAZINES

Ladies' Home Journal, August, 1955

"Babies Should Be Born at Home!" by Dr. M. F. Ashley Montagu

The author presents arguments in favor of having children at home and says: "The family is a unit, and its unity should never be broken. If that unity must be disturbed, it should never be in the manner so mechanically and unnecessarily produced by the usual obstetrical hospital."

Cosmopolitan, August, 1955

"A New Drug Brings Relief for the Tense and Anxious," by Lawrence Galton

"A new drug, Miltown . . . promises quick and safe relief for the tense and anxious. . . . Miltown is the most recent derivative of mephenesin. Not only is it effective, it is also free of penalty. The usual dose is one 400-milligram tablet after each meal and one at bedtime."

Family Weekly Magazine, July 31, 1955

"What's Behind Your Headaches?" by Regina Gruss

"This common complaint is a symptom, not a disease; it may be the harbinger of serious trouble." The article concludes with this advice: "Your general practitioner is well-equipped to tackle the problem. You can help him and yourself by seeing him promptly and cooperating with him fully."

Harper's Magazine, August, 1955

"The Salk Vaccine: What Caused the Mess?" by Leonard Engel

In analyzing what is called "the chaotic confusion over the polio inoculations," the author placed primary blame on governmental agencies. He says, "The Health Service and the Department (of Health, Education and Welfare) not only hurt the polio program and themselves by doing the wrong things. They did it through plainly avoidable public-relations ineptness." In two places Mr. Engel scolds the American Medical Association, together with the National Foundation for Infantile Paralysis and the Public Health Service, for failing to inform the public that vaccine takes some time to produce immunity and for the "notable lack of real planning for the technical aspects of producing vaccine."

Look, August 9, 1955

"Hiroshima Diary," by Dr. Michihiko Hachiya

An account of the Hiroshima atomic bombing through the eyes of a Japanese physician.

Saturday Evening Post, July 30, 1955

"They Heal Heartsick Children," by Jerome Ellison

The story of a nonprofessional volunteer organization called Recreation Service, Children of Bellevue, Inc. Dr. Randolph A. Wyman, Bellevue's medical superintendent, is quoted in the article as saying, "These amateurs are regarded as indispensable members of the hospital staff. We could no more do without them than we could do without penicillin."

DEATHS

rry, Benjamin Taylor ⊕ Rochester, Minn.; born in Birming- m, Ala., June 10, 1876; Johns Hopkins University School of edicine, Baltimore, 1904; research fellow in pathology at the iversity of Chicago, 1904 to 1905; member of the staff of the ockefeller Institute for Medical Research in New York City om 1906 to 1913; director of laboratories at the Kings County ospital in Brooklyn from 1913 to 1918; instructor of pathology Columbia University College of Physicians and Surgeons in ew York City from 1914 to 1918; professor of pathology at e Vanderbilt University School of Medicine and pathologist the Vanderbilt University Hospital in Nashville, Tenn., from 18 to 1925; postgraduate instructor in pathology at the Uni- rsity of North Carolina in the summer of 1923; director of boratories at the Toledo (Ohio) General Hospital, 1925 to 926; from 1926 to 1932 was at the Mayo Clinic as research orker on malignancy; acting professor of pathology at the niversity of Texas School of Medicine in Galveston, 1932 to 33; for many years on the staff of the Tacoma (Wash.) General ospital; specialist certified by the American Board of Pathol- gy; member of the American Association for the Advance- ent of Science and the American Society of Clinical Pa- ologists, which in 1938 awarded him its gold medal for an hibit on "Aids in Rapid Diagnosis of Tissues"; emeritus mem- r of the College of American Pathologists; the American edical Association in 1923 awarded him a Silver medal "for e demonstration of instructive specimens of pathologic an- tomy," in 1924 the Bronze medal, in 1927 a Certificate of erit "for exhibit of new stain and method of tissue micro- copy and excellence of demonstration," in 1928 special men- on "for excellence of personal demonstration," and in 1947 onorable mention "for exhibit on Razor Section Technic and e Polychroming of Methylene Blue"; from 1911 to 1913 joint ditor of *Journal of Experimental Medicine;* died June 14, ged 78.

Camp, Carl Dudley ⊕ Ann Arbor, Mich.; born in South Watauga, Tenn., Oct. 2, 1880; University of Pennsylvania Department of Medicine, Philadelphia, 1902; interned at the Howard Hospital in Philadelphia; from 1904 to 1907 instructor in neurology and neuropathology at his alma mater and assistant neurologist at Philadelphia General, Philadelphia Polyclinic, and University of Pennsylvania hospitals; in 1907 joined the faculty of the University of Michigan Medical School as clinical professor of diseases of the nervous system; in 1920 his title was changed to that of professor of neurology; later became professor emeritus of neurology; member of the American Neurological Association, of which he was formerly vice-president; one of the original members of the Central Neuropsychiatric Association; in 1914 president of the Detroit Neurological Society (now the Michigan Society of Neurology and Psychiatry); member of the Philadelphia Neurological Society, American Association of Pathologists and Bacteriologists, the American Psychopathological Association, the Research Club of the University of Michigan, Nu Sigma Nu, Alpha Omega Alpha, and Sigma Xi; honorary member of the American Academy of Neurology; died in the University Hospital May 23, aged 74, of hemorrhage from the urinary bladder.

Mandelbaum, Harry ⊕ Brooklyn, N. Y.; born in New York City March 10, 1895; Long Island College Hospital, Brooklyn, 1919; on the faculty of State University College of Medicine at New York City; fellow of the American College of Physicians, American College of Cardiology, American College of Chest Physicians, American Geriatrics Society, and the New York Academy of Medicine; member of the board of trustees and past-treasurer of the Medical Society of the County of Kings; fellow and secretary of the Brooklyn Society of Internal Medicine; member of the executive board of the New York Cardiological Society, of which he was a fellow; member of the World Medical Association; specialist certified by the American Board of Internal Medicine; physician in charge of the hypertension and nephritis clinic at the Jewish Hospital of Brooklyn, where he was associate in medicine; attending in medicine at the Jewish Sanitarium and Hospital for Chronic Diseases and the Brooklyn Hebrew Home and Hospital for the Aged; joint author with Dr. William Dock of "Ballistocardiography"; died May 27, aged 60, of coronary occlusion with infarction.

Kramer, Gabriel Bernard ⊕ Washington, D. C.; born in Russia April 1, 1884; Baltimore Medical College, 1907; also a lawyer; specialist certified by the American Board of Pathology; fellow of the American College of Physicians; founding fellow of the College of American Pathologists; member of the American Society of Clinical Pathologists; deputy coroner of Ramsay County in St. Paul from 1919 to 1923; from 1909 to 1913 instructor of anatomy at Flint Medical College of New Orleans University; associate professor of pathology at the New York Medical and Flower Hospital in New York City from 1944 to 1946; from 1916 to 1923 pathologist and director of laboratories at Ancker Hospital in St. Paul, and the Youngstown (Ohio) Hospital from 1923 to 1945; formerly consulting pathologist at the Salem (Ohio) City Hospital and the New Castle (Pa.) Hospital; for many years pathologist and director of laboratories at the Swedish-American Hospital in Rockford, Ill.; died in the Georgetown University Hospital April 6, aged 73, of cerebral hemorrhage.

Ellis, Bert Edward ⊕ Indianapolis; born in Linton, Ind., Nov. 23, 1889; Indiana University School of Medicine, Indianapolis, 1921; clinical professor of otorhinolaryngology at his alma mater, where he held various positions on the faculty; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Oto-Laryngology and the American Laryngological, Rhinological and Otological Society; past-president of the Indianapolis Medical Society, serving on its council for three years, and in 1948 acting chairman of the council; member of the board of directors of the American Otorhinologic Society for Plastic Surgery, of which he was president and vice-president; on the staff of the Methodist, St. Vincent's, and Indianapolis General hospitals; during World War I served in the medical division of the student military training courses at his alma mater; active member of the otolaryngology section, St. Vincent's Hospital, where he died June 3, aged 65, of multiple myeloma.

Green, Robert Montraville ⊕ Brookline, Mass.; born in Boston July 11, 1880; Harvard Medical School, Boston, 1906; continued training in Boston on the south surgical service at the Massachusetts General Hospital and subsequently served as intern at the Children's Hospital and at the Boston Lying-In Hospital; in 1930 became surgeon-in-chief of gynecology and obstetrics at the Boston City Hospital, a position he held until July, 1942; became an associate professor of applied anatomy at his alma mater, retiring as emeritus in 1947; member of the New England Obstetrical and Gynecological Society; in 1906 joined the staff of the *Boston Medical and Surgical Journal,* now the *New England Journal of Medicine,* as an assistant editor; in 1915 became editor-in-chief and continued in this position until 1921; remained on the editorial board since 1931; author of "A Translation of Galen's Hygiene (De Sanitate Tuenda)"; died May 29, aged 74, of acute myocardial infarction.

Nelson, Walter Garnett ⊕ Medical Director, U. S. Public Health Service, Balboa Heights, Canal Zone; born in Washington, D. C., Aug. 28, 1895; Georgetown University School of Medicine, Washington, D. C., 1918; joined the U. S. Public Health Service in 1920; during World War II was district medical officer for the third Naval District in New York; was in quarantine activities in Germany, The Netherlands, and Italy; from 1950 until 1952 was in charge of quarantine and immigration activities in continental Europe, stationed in Paris; since 1952 on detail with the U. S. Quarantine Station; died May 18, aged 59, of coronary disease.

⊕ Indicates Member of the American Medical Association.

Brown, Thomas Donald, Portsmouth, R. I.; Georgetown University School of Medicine, Washington, D. C., 1952; interned at the Gallinger Municipal Hospital in Washington, D. C.; served a residency at the Newport (R. I.) Hospital; also a graduate in pharmacy; certified by the National Board of Medical Examiners; member of the Rhode Island Medical Society; died in Newport May 2, aged 43, of cerebral embolism and aortic stenosis.

Browning, Albert Washington, Fluvanna, Texas; Chattanooga (Tenn.) Medical College, 1902; died in Snyder March 30, aged 78, of cerebral hemorrhage.

Brunson, Asa, El Paso, Texas; Memphis (Tenn.) Hospital Medical College, 1899; served during World War I; died June 15, aged 83.

Burress, Bert Overton, Washington, Ind.; Illinois Medical College, Chicago, 1905; member of the Indiana State Medical Association; served as city and county health officer; member of the city board of health; bank president; died in the Daviess County Hospital May 9, aged 77, of cerebral hemorrhage.

Caldwell, Austin Greene, Sinai, Ky.; Louisville (Ky.) Medical College, 1893; died in Lawrenceburg April 13, aged 88.

Callahan, Bernard Joseph, Denver; Jefferson Medical College of Philadelphia, 1900; died in the Veterans Administration Hospital in Cheyenne, Wyo., April 5, aged 89, of coronary thrombosis.

Clark, John D. ⊕ Wichita, Kan.; Northwestern University Medical School, Chicago, 1901; past-president of the Sedgwick County Medical Society; charter member of the Central Association of Obstetrics and Gynecology; fellow of the American College of Surgeons; on the staffs of Wesley and Wichita hospitals and St. Francis Hospital, where he died June 6, aged 80, of cerebral thrombosis.

Clark, Vinton John ⊕ Salt Lake City; Rush Medical College, Chicago, 1915; past-president of the Salt Lake County Medical Society and the Utah State Medical Association; formerly on the staff of St. Mark's Hospital; died June 12, aged 78.

Clarke, Harry Downer ⊕ Seward, Neb.; John A. Creighton Medical College, Omaha, 1912; served during World War II; past-president of the Seward County Medical Society; died in Rochester, Minn., June 13, aged 69, of coronary insufficiency and hypertension.

Costner, George Henry, Lincolnton, N. C.; University of Maryland School of Medicine, Baltimore, 1901; died in the Gordon Crowell Memorial Hospital April 17, aged 76, of carcinoma of the urinary bladder.

Danielson, Wilford Aldrich ⊕ Chicago; Chicago College of Medicine and Surgery, 1915; served during World War I; died June 29, aged 64, of cerebral hemorrhage, hypertension, and cancer of the prostate.

Davis, Charles Edward ⊕ Dallas, Texas; University of Michigan Medical School, Ann Arbor, 1949; interned at the Hermann Hospital; formerly a resident at the Brackenridge Hospital in Austin; resident at the Parkland Hospital; served in the Korean War; died in Austin June 4, aged 29.

Denchfield, Arthur Leighton, Oradell, N. J.; University and Bellevue Hospital Medical College, New York City, 1905; assistant physician at Bergen Pines County Hospital in Paramus, where he died May 13, aged 74, of carcinoma.

Dickinson, Harry Barham ⊕ Coulterville, Ill.; Washington University School of Medicine, St. Louis, 1927; served during World War I; company physician for the Illinois Central Railroad; on the staff of the Pinckneyville (Ill.) Hospital and St. Elizabeth's Hospital, Belleville, where he died June 11, aged 58, of retroperitoneal neurosarcoma.

Donais, Joseph Eusebe ⊕ Southbridge, Mass.; School of Medicine and Surgery of Montreal, Canada, 1907; served on the board of health; died in St. Vincent Hospital, Worcester, May 17, aged 78, of carcinoma of the stomach.

Donaldson, Buck, Castor, La.; University of Alabama School of Medicine, Mobile, 1910; died May 5, aged 76, of cancer.

Donaldson, Frederick August ⊕ Westwood, Mass.; Harvard Medical School, Boston, 1904; died May 5, aged 86, of arteriosclerotic heart disease.

Douglass, William Tyler ⊕ Harrisburg, Pa.; Jefferson Medical College of Philadelphia, 1901; an associate member of the American Medical Association; fellow of the American College of Surgeons; past-president of the Harrisburg Academy of Medicine and the Dauphin County Medical Society; served on the staff of Harrisburg Polyclinic Hospital; died May 3, aged 81, of coronary occlusion and myocardial infarction.

Duffy, Richard Nixon ⊕ New Bern, N. C.; Johns Hopkins University School of Medicine, Baltimore, 1906; fellow of the American College of Surgeons; on the staff of St. Luke's and Good Shepherd hospitals; died April 14, aged 72, of a heart attack.

Farnacy, Nicholas Lester ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1921; fellow of the American College of Surgeons; life member of the Cleveland Museum of Art; a member of the Cleveland Health Museum; on the staffs of the St. Luke's and Woman's hospitals and the Huron Road Hospital, where he died June 8, aged 59, of cancer.

Fedde, Bernhard Andreas, Brooklyn, N. Y.; University and Bellevue Hospital Medical College, New York City, 1900; member of the Medical Society of the State of New York; at one time assistant clinical professor of medicine at the Long Island College of Medicine; consultant in medicine at Kings County Hospital; physician emeritus at Norwegian Lutheran Deaconess Home and Hospital; died June 14, aged 77, of angina pectoris.

Ferguson, John Angus ⊕ Wyckoff, N. J.; Long Island College Hospital, Brooklyn, 1896; an associate member of the American Medical Association; formerly member of the board of education in Brooklyn; died in Valley Hospital, Ridgewood, June 9, aged 82, of arteriosclerosis.

Finner, Lucy Louise, San Francisco; Rush Medical College, Chicago, 1930; certified by the National Board of Medical Examiners; died in the San Francisco General Hospital May 29, aged 56, of multiple embolism of the lungs.

Flinn, Charles C. ⊕ Allegan, Mich.; Bennett Medical College, Chicago, 1901; died in the Allegan Health Center April 6, aged 78, of uremia.

France, Joseph John, Napa, Calif.; Milwaukee Medical College, 1905; served during World War I; died in the Providence Hospital, Oakland, May 25, aged 78, of acute hemorrhagic pancreatitis.

Frankel, Herbert, Framingham, Mass.; College of Physicians and Surgeons, Boston, 1914; died June 10, aged 66.

Frankenstein, Victor Samuel ⊕ Chicago; Northwestern University Medical School, Chicago, 1895; an associate member of the American Medical Association; on the staff of the Michael Reese Hospital and the Woodlawn Hospital, where he died June 15, aged 85, of acute bacterial endocarditis.

Frost, Charles L., Bolivar, Tenn.; Memphis (Tenn.) Hospital Medical College, 1909; died June 1, aged 72, of coronary occlusion and cirrhosis of the liver.

Gore, Samuel Kirkham ⊕ Houston, Miss. (licensed in Mississippi in 1922); died in the Houston Hospital June 12, aged 68, of carcinoma of the rectum.

Griggs, Samuel Otis, Fort Thomas, Ky.; Medical College of Ohio, Cincinnati, 1896; member of the Kentucky State Medical Association; for many years health officer of Dayton, where he was on the staff of the Speers Memorial Hospital; died April 1, aged 82, of arteriosclerosis.

Haines, Franklin Gregg ⊕ Warren, Pa.; Baltimore Medical College, 1895; for many years county medical director; on the staff of the Warren General Hospital, where he died May 19, aged 83, of chronic cholecystitis and peritonitis.

Hammond, James William, Byron, Calif.; California Medical College, San Francisco, 1897; died in Martinez June 10, aged 98, of arteriosclerosis.

Hayes, Joseph Owens ⊕ Detroit; University of Buffalo School of Medicine, 1947; interned at the Sisters of Charity Hospital in Buffalo; formerly a resident at the Massachusetts Memorial Hospitals in Boston and the Allegheny General Hospital in Pittsburgh; certified by the National Board of Medical Examiners; formerly on the staff of the Veterans Administration Hospital in Buffalo; on the staff of the Jennings Memorial Hospital; died May 27, aged 34, of coronary occlusion.

Hennemuth, John Henry ⊕ Emmanus, Pa.; Jefferson Medical College of Philadelphia, 1922; formerly deputy coroner, councilman, and burgess; past-president of the Lehigh County Medical Society; served in the Mexican Border campaign, World War I, and during World War II; died March 30, aged 59, of coronary occlusion.

Hickman, George Lester ⊕ Bryant, S. D.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; died June 13, aged 75, of cerebral thrombosis.

Hill, George Ray ⊕ Rochelle, Ill.; University of Illinois College of Medicine, Chicago, 1936; interned at the Mercy Hospital in Cedar Rapids, Iowa, and the Methodist Hospital in Fort Wayne, Ind.; served during World War II; died June 11, aged 44.

Hofferkamp, August George ⊕ Jeffersonville, Ind.; Loyola University School of Medicine, Chicago, 1926; member of the American College of Chest Physicians and the American Trudeau Society; died in the St. Edward Hospital, New Albany, March 25, aged 62, of cancer of the pancreas.

Horsley, Frederick Melville ⊕ Arrington, Va.; Medical College of Virginia, Richmond, 1908; served during World War I; died May 11, aged 80, of coronary thrombosis.

Howe, William R., Youngstown, Ohio; College of Physicians and Surgeons, Baltimore, 1899; died in the North Side Hospital June 20, aged 91, of cerebrovascular accident and arteriosclerosis.

Huffman, James William, Bismarck, Mo.; Medical College of Indiana, Indianapolis, 1905; died April 9, aged 77, of hypostatic pneumonia.

Hulbush, William Albert ⊕ Bellingham, Wash.; Indiana University School of Medicine, Indianapolis, 1908; past-president of the Whatcom County Medical Society; formerly chairman of the city health board and county coroner; associated with the state department of public health as screening physician in Whatcom County for public assistance medical services; served during World War I; past chief of staff of St. Luke's Hospital, where he died May 25, aged 70, of coronary disease.

Hunsicker, Hannah Marian, Huntingdon Valley, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1902; public school doctor; died April 8, aged 90, of carcinoma.

Hunter, Edward R. ⊕ Delanco, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1914; an associate member of the American Medical Association; health officer; on the staff of Burlington County Hospital in Mount Holly; died in the Presbyterian Hospital, Philadelphia, June 6, aged 67, of heart disease.

Huntington, Harry Gilbert ⊕ Howell, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; for many years city health officer; for 12 years served on the school board; died June 6, aged 70, of acute congestive cardiac failure.

Jahiel, Richard, New York City; Université de Paris Faculté de Médecine, France, 1927; served in the French Army during the early part of World War II; on the staff of the Montefiore Hospital; died June 1, aged 56, of carcinoma of the stomach.

Jordan, Peter Andrew ⊕ Santa Jose, Calif.; Jefferson Medical College of Philadelphia, 1901; specialist certified by the American Board of Otolaryngology; member of the Pacific Coast Oto-Ophthalmological Society; an associate member of the American Medical Association; past-president of the Santa Clara County Medical Society; served during World War I; on the staff of the Santa Clara County Hospital, O'Connor Hospital, and San Jose Hospital; died June 1, aged 84, of a heart attack.

Kautz, William Shaw, Cincinnati; Miami Medical College, Cincinnati, 1905; on the staff of the Jewish Hospital, where he died June 5, aged 75, of coronary artery sclerosis.

Lee, George Herbert ⊕ Denver; Denver and Gross College of Medicine, 1905; an associate member of the American Medical Association; served on the staffs of the St. Anthony, General Rose Memorial, Presbyterian, and Beth Israel hospitals; died May 31, aged 77, of cerebral thrombosis and arteriosclerosis.

Lynch, George Vincent ⊕ Oshkosh, Wis.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1917; fellow of the American College of Surgeons; past-president of the Winnebago County Medical Society; chief of surgery at Mercy Hospital; died in the Jackson Memorial Hospital, Miami, Fla., April 28, aged 68, of septicemia.

McDonald, William Brown, Dixon, Ill.; Hering Medical College, Chicago, 1910; died June 8, aged 90, of arteriosclerotic heart disease.

McNair, Lawrence N. ⊕ Albion, Mich.; Detroit College of Medicine, 1911; during World War I assigned as medical officer to the Student Army Training Corps unit at Albion College; on the staff of the James W. Sheldon Memorial Hospital, where he was president of the medical staff in 1942, secretary of the staff in 1952, and vice-president in 1953, and where he died June 14, aged 68, of extensive posterior coronary infarction and bronchiectasis.

Matthews, John Calvin ⊕ Huntington, W. Va.; North Carolina Medical College, Charlotte, 1913; fellow of the American College of Surgeons; on the staffs of Guthrie Hospital and St. Mary's Hospital, where he died May 31, aged 69, of myocardial infarction.

Newton, Robley Dunglison, Fort Myers Beach, Fla.; Medico-Chirurgical College of Philadelphia, 1896; died in the Lee Memorial Hospital in Fort Myers April 4, aged 84, of shock.

Offenthal, Adolph W. ⊕ New York City; Université Libre de Bruxelles Faculté de Médecine, Belgium, 1913; died April 26, aged 66, of cerebral hemorrhage.

Oginz, Philip ⊕ Brooklyn, N. Y.; Long Island College Hospital, Brooklyn, 1908; associate member of the American Medical Association; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the American College of Surgeons; member of the Brooklyn Gynecological Society; on the staffs of the Beth-El and Kings County hospitals; died April 22, aged 69, of arteriosclerotic rupture of an aortic aneurysm.

Pardee, Charles Arthur, Fort Myers, Fla.; Northwestern University Medical School, Chicago, 1927; interned at the Wesley Memorial Hospital in Chicago; served during World War I; member of the American Academy of General Practice; died April 22, aged 59, of coronary occlusion.

Resnik, Ernest David ⊕ Brooklyn, N. Y.; Long Island College Hospital, Brooklyn, 1922; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the American College of Surgeons; on the staffs of the Caledonian and Maimonides hospitals; on the staff of the Coney Island Hospital from 1922 to 1927; died June 20, aged 58, of carcinoma of the pancreas.

Ridge, Frank Isaac, Kansas City, Mo.; Columbia University College of Physicians and Surgeons, New York, 1910; assistant clinical professor of medicine at the University of Kansas School of Medicine, Kansas City, Kan.; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; on the staffs of St. Luke's and St. Mary's hospitals; died March 24, aged 69, of rupture of esophageal varices and cirrhosis of the liver.

Roberts, John Charles ⊕ Peoria, Ill.; College of Physicians and Surgeons of Chicago, 1887; honorary member of the staff of Proctor Hospital; died June 19, aged 93, of glomerulonephritis and arteriosclerosis.

Ross, Archibald Charles, Albion, Maine; Medical School of Maine, Portland, 1909; local health officer; on the staff of the Thayer Hospital in Waterville; died May 24, aged 73, of coronary thrombosis.

St. Amant, Guy Stanhope ⊕ Gonzales, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1911; member of the American Academy of General Practice; died in Our Lady of the Lake Hospital, Baton Rouge, May 26, aged 71, of mesenteric thrombosis.

Salmon, Leon Trudeau, New Hope, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1898; died in Glen Cove, N. Y., April 6, aged 79, of arteriosclerotic heart disease.

Schiffman, Fredric Chace, Baltimore; University of Pennsylvania School of Medicine, Philadelphia, 1954; intern at the University of Maryland Hospital; died April 6, aged 24.

Schlatmann, Vincent Henry, Plainfield, N. J.; Georgetown University School of Medicine, Washington, D. C., 1928; served during World War II; on the staff of the Veterans Administration Hospital in East Orange; died May 29, aged 51, of coronary thrombosis.

Schulz, Arthur Paul Erich, St. Charles, Mo.; Washington Unisity School of Medicine, St. Louis, 1912; died in St. Joseph's Hospital May 7, aged 73, of carcinoma of the larynx.

Scott, Samuel Avery, Amarillo, Texas; Western Reserve University School of Medicine, Cleveland, 1947; for two years served in the medical reserve corps of the U. S. Army; interned at the Southern Baptist Hospital in New Orleans; served a residency at the Veterans Administration Hospital, John Gaston Hospital, and the Baptist Memorial Hospital, all in Memphis, Tenn.; died in the Northwest Texas Hospital June 18, aged 30, of acute myocarditis and peritonsillar abscess with septicemia.

Shrimpton, Elizabeth Latimer, Syracuse, N. Y.; Syracuse University College of Medicine, 1901; died June 6, aged 79, of senility.

Simmerman, John Walter, Roanoke, Va.; Maryland Medical College, Baltimore, 1911; for many years member of the school board; member of the Medical Society of Virginia; on the staff of the Shenandoah Hospital; died May 25, aged 67, of acute coronary occlusion.

Smith, John William ⊕ Milwaukee; Marquette University School of Medicine, Milwaukee, 1915; member of the American Academy of Dermatology and Syphilology; formerly on the faculty of his alma mater; past-president of the state board of medical examiners; at one time treasurer of the State Medical Society of Wisconsin; died June 19, aged 63, of pulmonary embolism.

Soles, Fred Arthur ⊕ Platteville, Wis.; the Hahnemann Medical College and Hospital, Chicago, 1903; died in Marshfield May 18, aged 81, of coronary thrombosis.

Stamey, James Thomas ⊕ St. Joseph, Mo.; Central Medical College of St. Joseph, 1897; died June 20, aged 82.

Stitt, Richard Marks ⊕ St. Petersburg, Fla.; Duke University School of Medicine, Durham, N. C., 1946; interned at Duke Hospital in Durham, N. C.; served in the U. S. Naval Reserve on Truk Island in the South Pacific from 1947 to 1949; certified by the National Board of Medical Examiners; on the staffs of the Mound Park and St. Anthony's hospitals; died April 13, aged 34, of hypertension.

Stubenrauch, Charles Henry Sr. ⊕ Havana, Ill.; Johns Hopkins University School of Medicine, Baltimore, 1907; died in a Quincy hospital June 21, aged 74, of coronary disease.

Swope, Oscar Clinton ⊕ Kingston, Mass.; Boston University School of Medicine, 1902; for many years chairman of the school committee and first school physician; served on the board of the Jordan Hospital in Plymouth, where he was a member of the board of trustees of the Plymouth Five Cents Savings Bank; died June 3, aged 78.

Terrell, Thomas K. ⊕ Lynchburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1895; died June 4, aged 85, of pyelonephritis and pulmonary tuberculosis.

Thornton, John Thruston ⊕ Charlottesville, Va.; Medical College of Virginia, Richmond, 1902; member of the American Academy of Pediatrics; fellow of the American College of Physicians; died May 30, aged 79, of arteriosclerosis.

Tyson, John Joyner ⊕ Durham, N. C.; Medical College of Virginia, Richmond, 1928; fellow of the American College of Surgeons; assistant professor of hospital administration at Duk University School of Medicine; served on the staffs of variou administration posts; manager of the Veterans Administratio Hospital, where he died May 27, aged 57, of coronary arter disease.

Wahle, George Henry ⊕ Boise, Idaho; Washington Universit School of Medicine, St. Louis, 1919; fellow of the America College of Surgeons; senior member of the American Goit Association; member and past-president of the Southwest Idah Medical Association; member and past-president of the sta St. Alphonsus Hospital; on the staff of St. Luke's Hospital; die June 20, aged 61, of carcinoma.

Wahrer, Carl William, El Dorado, Calif.; Rush Medical Co lege, Chicago, 1902; died May 29, aged 76, of carcinoma of t cecum.

Waligora, Stanley B., Cicero, Ill.; the Hahnemann Medic College and Hospital, Chicago, 1915; died June 13, aged 6 of coronary occlusion.

Wallace, Charles James, Two Harbors, Minn.; University Minnesota College of Medicine and Surgery, Minneapolis, 190 died April 16, aged 81, of carcinoma of the stomach.

Wang, Israel ⊕ Port Chester, N. Y.; Long Island College Ho pital, Brooklyn, 1913; specialist certified by the American Boa of Internal Medicine; emeritus attending physician at the Unit Hospital, where he died April 26, aged 69, of coronary thro bosis.

Ward, Hugh John ⊕ Hazleton, Pa.; Jefferson Medical Colle of Philadelphia, 1944; interned at the Nazareth Hospital Philadelphia; served in the China-Burma-India Theatre duri World War II; served on the staff of the Shamokin (Pa.) Sta Hospital; died June 3, aged 43.

Watson, Nowlin ⊕ Clarksville, Texas; Kentucky School Medicine, Louisville, 1901; veteran of the Spanish-Americ War; for many years city health officer; past-president of t Rotary Club; on the staff of the Red River County Hospit where he died June 8, aged 76, of diabetes mellitus.

Wellman, Clarence Lovejoy, Grove, Okla.; Kansas City (M Medical College, 1901; veteran of World War I; died June aged 77, of coronary occlusion.

Wells, Milo C., Grove, Okla.; University of Louisville (K School of Medicine, 1929; died in St. John's Hospital, Jopl Mo., June 16, aged 55, of coronary occlusion.

Wiebe, Dietrich Vergil ⊕ Sacramento, Calif.; University Kansas School of Medicine, Kansas City, Kan., 1925; intern at the San Joaquin General Hospital in French Camp; a medical officer for the Bureau of Indian affairs; at one time medical missionary in China; served as board member of t Reedley (Calif.) Hospital; died in San Francisco March aged 67, of coronary occlusion.

Wilkerson, Leonard Boyce, Shorter, Ala.; Kentucky Univers Medical Department, Louisville, 1902; died in Montgome April 20, aged 80, of circulatory failure.

Williams, Leonidas ⊕ Lewisburg, W. Va.; University of Virginia Department of Medicine, Charlottesville, 1939; interned at the Wheeling (W. Va.) Hospital; died June 26, aged 46, of acute myocardial infarction.

Wilson, Dilimus Wesley ⊕ Fort Payne, Ala.; Chattanooga (Tenn.) Medical College, 1900; on the staff of the DeKalb County General Hospital; died June 6, aged 83, of hypostatic pneumonia, osteoarthritis, and myocarditis.

Winter, Joseph Augustus, Leonia, N. J.; Marquette University School of Medicine, Milwaukee, 1937; member of the Association for the Study of Internal Secretions; served during World War II; died in the Englewood (N. J.) Hospital June 9, aged 44, of a coronary attack.

Woodall, Percy Hogan, Homewood, Ala.; University of Nashville (Tenn.) Medical Department, 1896; died April 12, aged 80, of arteriosclerotic cardiovascular disease.

FOREIGN LETTERS

AUSTRIA

Acute Leukemia in Adults.—At the meeting of the Society of Physicians in Vienna on March 4, Braunsteiner and Reimer reported on a 73-year-old woman and a 35-year-old man with acute leukemia who obtained complete, long-lasting remissions with 6-mercaptopurine. Therapeutic success in elderly patients with acute leukemia is rare. The smallest adequate dose is recommended as the therapeutic principle.

Animal Experiments Concerning Vagus Death.—At the same meeting Dr. H. Kolder reported on the cause of death in explosive decompression, a form of death for which the term shock death is suggested. The cause is a pressure wave of known amplitude and duration. It can be proved that the pressure wave attacks the thorax and the lung respectively. There damage is done by which receptors in the lung are stimulated; the stimulus then is transmitted by the vagus nerve to the respiratory center and an irreversible cessation of respiration results. The changes in the lung alone do not threaten life, therefore vagotomized animals can survive the exposure to pressure waves. Anesthesia or covering the thorax with rubber foam also prevents this "vagus death."

Etiology of Congenital Cardiac Defects.—At the same meeting Navratil, Wenger, and Kaindl reported on a series of 100 mothers of patients with congenital cardiac defects and 200 mothers of healthy children who served as controls. It was shown that hormonal disturbances of the mother, which particularly affect the function of the ovaries, predispose to congenital cardiac defects. A significantly increased incidence of late menarche, tendency to repeated spontaneous abortion, temporary sterility, and irregular menstruation was observed in the mothers of children with congenital defects. Other factors consisted of multiparity and advanced age of the mother at the time of parturition. Children with congenital cardiac defects have a larger number of siblings than healthy children of the average population do. If hereditary influences might play a part in the origin of congenital cardiac defects, then it seems most likely that a hereditary hormonal weakness is transmitted. The arrest of development could result from the concurrence of the hormonal disturbance of the fetus and that of the mother.

Idiopathic Epilepsy.—At the same meeting Dr. E. Niedermeyer of Innsbruck discussed the question whether today one still is justified in speaking of idiopathic epilepsy. Electroencephalograms show that some forms of epilepsy do not have their origin in cortical lesions but suggest a functional disturbance of the diencephalic apparatus, for which Penfield and Jasper of Montreal have coined the collective term of "centrencephalon." It is suggested that idiopathic epilepsy is primarily a centrencephalic dysfunction. The three most important factors in epilepsy are: (1) predisposition to convulsions, (2) irritative noxae, and (3) a convulsion eliciting factor. The predisposition to convulsions means a dispositional defect of the cerebral protective mechanisms against the tendency to hypersynchronous-epileptogenic discharge of ganglion cells. This predisposition is especially important in idiopathic epilepsy. Irritative noxae are predominant in the symptomatic forms, but the predisposition to convulsion may also be present. With certain reservations the designation "idiopathic-symptomatic" may still be used.

Shock Therapy in Childhood Psychosis.—At the meeting of the Society of Physicians of Vienna on May 13, Hift and Spiel reported the case of a girl who, at the age of 13, had been subjected to electroshock therapy. An endogenous psychosis had been definitely diagnosed, and the severity of the psychosis justified the treatment. The electroshock therapy, which was carried out under constant control of psychological tests, was successful. Subsequent examinations revealed that no irreversible damage had been caused. Thus shock therapy seems to be indicated even in children, in selected cases.

Glycogen Storage in Diabetic Patients.—At the same meeting Dr. A. Beringer said that he determined the glycogen content of the liver of animals with alloxan diabetes after they had been given injections of regular insulin, protamine zinc insulin, insulin with retarded action, and depot insulin. Repeated injections of small quantities of insulin produced a greater deposition of glycogen than did large quantities of insulin. Under the influence of protamine zinc insulin more glycogen was deposited in the liver than was the case with corresponding doses of regular insulin. The insulin with retarded action and depot insulin had an intermediate action in this respect. It could be demonstrated by means of puncture biopsy of the liver that these results are applicable also to diabetes in human beings. Thus, when diabetic patients have complications in which an increased glycogen content of the liver is desirable, treatment with protamine zinc insulin, retarded action insulin, or depot insulin seems preferable to treatment with regular insulin.

BRAZIL

Serial Sections in Uterine Cervical Atypias.—Drs. Alberto Rocha and Lucy Teixeira of the histopathological laboratory of the gynecologic department, Minas Gerais State University, at Belo Horizonte report in *Anais brasileiros de ginecologia* (20:1, 1955) a series of 33,820 sections made from 101 biopsy specimens and 29 amputated cervices. Among the biopsy specimens, 24 were from patients with stage O cancer whose diagnosis was made by means of histopathological examinations of nonserial sections, before the inauguration of the new laboratory. The 24 histological blocks of the biopsy specimens were reexamined by serial sections, which resulted in the finding of two cases already presenting signs of invasion, invalidating their classification as stage O cancer. One of these two patients had been treated by radium and died five years after the diagnosis of cancer was established. The other, who was treated by simple total hysterectomy, was in good condition six years after the diagnosis was established. Review of the 24 specimens revealed O stage cancer in 15 cases; initial invasion in 2; slight atypia in 2; cervicitis in 2; and insufficient material in 3. A review of the 14 biopsy specimens in the whole series that showed simple atypia confirmed this diagnosis in 11 cases; one was classified cancer stage III, 3b; one, cancer stage Ib with suspicion of IIIB; and one had epithelial hypertrophy and cervicitis. After the inauguration of the new laboratory, 10,464 sections were examined from 61 biopsy specimens. The serial sections from 40 of these revealed simple atypia in 2 cases; increasingly atypical epithelium (stage O cancer) in 2; epithelioma in 4; epithelial perforation in 4; regressive changes in 11; insufficient material in 7; acute condyloma in one case; and normal epithelium in 9. Among the 29 cervices removed, 11 showed stage O carcinomas and 18 showed normal epithelium. In only one was a more marked atypia than that disclosed by the previous biopsy found.

Diffuse Scleroderma.—Dr. J. Aguiar Pupo in *Revista do Hospital das clínicas* (10:1, 1955) analyzed a series of 13 cases of diffuse scleroderma. Seven of the 13 patients were female and 6 were male in contrast to the marked predominance of female patients that is considered a rule in this disease. Only one patient was more than 60 years old; two were more than 40; and the rest were under 35. The onset was preceded by Raynaud's phenomenon in four patients and by varying degrees of edema and pains in the joints in nine. Scleroderma of the

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The items in these letters are contributed by regular correspondents in the various foreign countries.

extremities was seen in all but one. Diffuse abnormal pigmentation was found in four patients and areas of poikiloderma in three. The esophagus was involved in six patients, the heart in three, the lungs in two, and the intestines in three. The radiological study of the skeleton disclosed a diffuse demineralization, while in the extremities osteoporosis was frequently noted, with narrowing of the articular spaces or bone absorption of the last phalanges. Alterations in the nervous system were not found, except in a patient who presented symptoms of psychosis a few days before he died. The basal metabolic rate was determined in seven patients, four presenting increased values. In a patient in whom the basal metabolic rate was increased, the scleroderma began 18 months after thyroidectomy was performed. Alkaline calcium phosphate and inorganic phosphorus levels in the blood were normal in all patients. The globulin level was always increased. Histopathological examinations disclosed the usual changes and frequently the findings of liquefactive degeneration of the basal layer and a variable number of chromatophores full of melanin in the chorion. It was also ascertained that the involvement of the collagenic fibers was not always uniform in the early stages of the process. Thus, in two patients the collagenic tissue of the superficial skin layers was apparently normal, alterations being present only in the deep layers. Fibrinoid degeneration of the collagen or of the vessel walls was not seen. Treatment with cortisone, corticotropin, *p*-aminobenzoic acid, tocopherol, propylthiouracil, pancreatic extract, heparin, and sympathectomy was tried without success. The prognosis of diffuse scleroderma is poor. Death occurred in seven patients after one to five years. The general condition of two patients is not known, but a follow-up of the remaining four indicated that the disease was arrested, although the patients were practically invalids.

Causes of Peritonitis.—Dr. A. Behmer in *Revista do Hospital das Clinicas* (**10**:25, 1955) analyzed 31,000 autopsy reports with the aim of ascertaining the importance of intestinal inflammation as a cause of peritonitis. Peritonitis was classified as caused by nonspecific intestinal inflammations, specific intestinal inflammations, and other causes. There were 582 cases of intestinal inflammation of undetermined cause, but almost all of these presented the pathological features of bacillary dysentery. In this group, 63 cases (10.8%) showed lesions of peritonitis. Intestinal ulcers were the most common, being observed in 337 autopsies, including 245 cases of ulcerative colitis, 44 of ulcerative enteritis, and 48 of ulcerative enterocolitis. Pseudomembranous lesions of the intestines were observed in 150 autopsies, including 93 cases of colitis, 33 of enteritis, and 24 of enterocolitis. The 63 cases of nonspecific intestinal inflammations causing peritonitis involved the small intestine in 26 cases, the colon in 27, and both in 10. There were 50 cases of peritonitis among the 337 autopsies showing intestinal ulcers, or 14.8%, and only 9 among the 150 cases of intestinal pseudomembranous lesions, or 6%. Among the 337 autopsies showing ulcers, the ulcers of the small intestine appeared as the predominant factor in the production of peritonitis, as there were 22 cases of peritonitis among 44 cases of enteritis (50%), while there were only 22 among 245 cases of colitis (9%), and 6 among 48 cases of enterocolitis (12.5%).

A similar study of the group of the pseudomembranous intestinal processes revealed pseudomembranous enteritis in 12.1%, pseudomembranous enterocolitis in 12.5%, and pseudomembranous colitis in only 2.1%. When the ulcers were located in the colon, in a total of 22 cases of peritonitis there were 14 with perforation and 8 without. When the lesion was located in the small intestine, in a total of 22 cases of peritonitis there were 12 with perforation and 10 without perforation. Thus the proportion of cases without perforation is higher in ulcerative enteritis than in ulcerative colitis. In the cases with inflammation of both intestines, in six presenting peritonitis there were two with perforation and four without, such perforations being always observed in the small intestine only. The proportion of peritonitis without perforation is almost the same for the two groups of cases with ulcerative and pseudomembranous inflammation (6 and 6.5% respectively).

In the 31,000 autopsies, there were 1,278 cases of intestinal lesions of a specific character (tuberculosis in 999, amebiasis in 170, typhoid in 41, paracoccidioidomycosis in 36, and venereal lymphogranulomatosis in 32). Of the 1,278 autopsies with specific intestinal lesions, 193 cases (15.1%) were accompanied by peritonitis. The largest number of cases with peritonitis (132) was found in tuberculous group. The second, third, and fourth largest were in the amebiasis, paracoccidioidomycosis, and typhoid groups, with 13.4, 8.8, and 6.7 respectively. Venereal lymphogranulomatosis represented only 2.5% of the cases. If we included tuberculous peritonitis without intestinal lesions we would have a total of 423 cases of peritonitis, 362 being of tuberculous origin, which gives the high proportion of 85.5% of all cases of specific peritonitis. The process that presented the highest proportion of intestinal lesion accompanied by peritonitis was paracoccidioidomycosis with 47.2%, followed, in decreasing order, by typhoid with 31.7%, venereal granulomatosis with 15.6%, amebiasis with 15.2%, and tuberculosis with 13.2%.

Besides the causes of peritonitis in connection with the previous two groups of nonspecific and specific intestinal lesions, there were 792 autopsies presenting peritonitis due to other causes including surgical acts in 259, tumors in 106, appendicitis in 82, diseases of the liver and the biliary ducts in 66, diseases of the genitals in 42, gastric ulcer in 26, duodenal ulcer in 26, megacolon in 18, septicemia in 16, strangulated hernia in 12, myocardial infarction in 6, intestinal obstruction in 5, megaesophagus in 4, less frequent causes in 86, and undetermined causes in 38.

Cancer of the Thyroid.—Cancer of the thyroid is not so rare as was formerly thought, according to Dr. A. Rego in *Revista brasileira de cirurgia* (**29**:31, 1955), who reports a series of 1,231 patients who underwent thyroidectomy for goiter. Of these patients, 56 were found to have cancer. This incidence of cancer varies according to the type of goiter. A higher frequency was observed in nodular goiter (52 cancers in 910 patients) than in toxic diffuse goiter (4 cancers in 321 patients). It is also higher in nontoxic goiter (35 cancers in 470 patients) than in toxic goiter (21 cancers in 761 patients). Among the 910 patients with nodular goiter, the incidence of cancer varied depending on whether the goiter was uninodular or multinodular. In the former there were 39 cancers in 395 patients, and in the latter there were 13 cancers in 515 patients. Dr. Rego found cancer in both toxic and nontoxic goiters, but a higher incidence was discovered in uninodular goiter. Of 470 patients with nodular nontoxic goiter there were 35 cancers, or 7.4%, the incidence for uninodular and multinodular nontoxic goiters being respectively 10.7 and 4.5%, while among 440 patients with toxic goiter there were 17 cancers, or 3.9%, the incidence for uninodular and multinodular toxic goiter being respectively 8.8 and 0.7%. These figures illustrate the markedly higher frequency of cancer in uninodular goiter, be it toxic or nontoxic. These small tumors are precisely the ones that go undetected, or whose surgical removal is generally believed to be contraindicated. They cause little physical inconvenience and small or no functional impairment of the gland, the patient being always grateful to the physician who, erroneously, follows this line of reasoning.

Intestinal Schistosomiasis.—The repeated examination of stools, even by means of the sedimentation technique, will not reveal all cases of intestinal schistosomiasis, because of the small number of schistosomes, or the predominant infestation by parasites of the same sex, or even the advanced stage of the disease. Believing that the epidemiological significance of this fact for the evaluation of the incidence of the disease in endemic areas had never been studied before, Dr. Luis Pereira da Silva and co-workers, of the National Department of Health, made an experimental study in a rural district in the state of Paraíba. An earlier survey of the district showed an infestation index of 8.7% for the age group from birth to 9 years, and 33% for the group 10 years and over. For the present study the authors performed four successive stool examinations and an intradermal test on 67 random persons aged 10 or over who showed negative results on first examination. By this method the incidence of the disease was found to be not 33 but 73%. For other intestinal helminths (Ascaris lumbricoides, Trichuris trichiura, Strongyloides stercoralis, Enterobius vermicularis, and Ancylostoma duodenale) the infestation index went up about 50%. The authors conclude that the results of surveys made through only one stool examination do not represent the real incidence of intestinal schistosomiasis. In areas where the disease has long been endemic, if the stool survey reveals the existence of a certain number of persons harboring the parasite and the exposure of the entire population is about equal, the use of adequate diagnostic procedures will probably disclose that most of the population is parasitized. One of the main causes of variation of the infestation index in different localities is the use of nonhomogeneous groups of persons, when these localities lie in a zone where the disease has long been endemic.

New Maternity Hospital.—The Maternity Hospital of São Paulo, which was officially opened on Mother's Day, is the biggest hospital devoted exclusively to obstetrics in South America. The city of São Paulo, which has 3 million inhabitants, needs about 2,000 obstetric beds and with the addition of 500 beds in the new hospital there are now 1,421 such beds available. An increment of about 200 beds each year is needed for the city. The new hospital can accommodate about 26,400 deliveries a year. The nursery has room for 450 patients, of which 40 cradles are for prematures and 15 are in an isolation ward. There are 16 delivery rooms, 8 of which are equipped for major operations.

CHILE

Correlation of Symptoms with Hemodynamic Findings in Mitral Valve Stenosis.—At a meeting of the Chilean Heart Society in 1954, Prof. F. Rojas and his co-workers stressed the importance of making a correct diagnosis of pure mitral valve stenosis and the degree of stenosis, so that the advisability of surgical treatment could be evaluated. In a series of 30 patients with pure or predominant mitral valve stenosis, the average age was 33 years. Eighteen were treated surgically. Paroxysmal dyspnea, pulmonary edema, and hemoptysis were not seen when the mitral orifice had an area of 1.5 sq. cm., but if the area was smaller one or more of these symptoms was present. There was no clear-cut relation between cardiac output and body development. One-third of the patients had cyanosis and/or the typical mitral facies. Although the oxygen saturation was practically normal in all patients, the difference in oxygen saturation between arteries and veins was great in all patients but was slightly greater in the cyanotic group. The decrease in the vital capacity of the cyanotic group was more striking. The arterial blood pressure was compared with the area of the mitral orifice and the cardiac output, and it was found that as the area decreased the systolic pressure and output also decreased proportionately. In all these patients a definite correlation existed between the clinical and hemodynamic findings. A similar correlation could be established with pulmonary capillary pressure. A relationship also existed between the intensity of the second pulmonic sound and pulmonary pressure. The radiographic study of the left auricle and mitral area and the capillary pressure also revealed a definite correlation. Correlation between the size of the right ventricle and pulmonary arterial pressure on one hand and total pulmonary resistance on the other were also noted, as was right ventricular hypertrophy as shown in the electrocardiograms in relation to pulmonary arterial pressure, arteriolar resistance, and area of the mitral orifice.

CUBA

Gout.—In *Revista médica cubana* (vol. 66, no. 3, March, 1955) Dr. J. M. Ballejo said that gout is almost forgotten in Cuba, because it is considered to originate only in foreign countries. None of his 17 patients with the disease gave a family history of gout. All of his patients were white men. Obesity was present in 10 patients in his series, alcoholism in 13, and hypertension in 4. The average age of the patients was 40 years and the duration of the disease varied from a few weeks to 14 years. The initial attack occurred in the large toes, ankles, or both. An average of 12.2 mg. of 17-ketosteroids per 100 cc. was found in 24-hour urine specimens. The determination of the 17-ketosteroid level was of diagnostic value. The drugs used included colchicine, corticotropin, sodium salicylate, aspirin, probenecid, and cinchophen. Cinchophen, because of its toxic effects, must be used with caution. Patients must rest and have a light purine-poor diet with fruit juice, milk, and plenty of water.

Action of Histamine and Salicylates on Rheumatic Conditions.—In the same issue Landa and de Diego state that, since the effects of cortisone and corticotropin on rheumatic joints has been studied, many observations have been made to determine whether the beneficial results obtained by salicylates were produced by a similar mechanism. They showed that salicylates given orally and parenterally acted similarly to corticotropin; that histamine produced an eosinopenia within 90 minutes of its administration similar to but more rapid than that of the hormones and salicylates; and that patients to whom combined histamine and salicylates were administered by iontophoresis showed the same improvement as when corticotropin was used. In a series of 65 patients, 36 had bursitis, 25 calcific tenontitis of the shoulders, and 4 had other types of bursitis. There were 22 healthy control patients. It was found that the good results obtained with iontophoresis with histamine and salicylates were due to the stimulus that salicylates produced on the anterior lobule of the pituitary. Besides the well-known, classic effects of the former, it caused the latter to liberate corticotropin, which in time stimulated the adrenals to produce cortisone, compound F, and other steroids. Histamine and salicylates when given together by iontophoresis act synergistically, producing better results than when only sodium salicylate is used. Histamine given by iontophoresis acts on the eosinophils in the same way as when it is injected.

DENMARK

Bovine and Human Brucellosis.—In *Danish Medical Bulletin* for May, 1955, Axel Thomsen stated that by 1944 the charting of bovine brucellosis had reached such a point that about 25% of all the herds and 11% of the total cattle population in Denmark were found to be infected. In 1946 Denmark adopted the Bang ring test, a sample of milk instead of a sample of blood being used. This simple test is extremely sensitive and can be applied to all the herds in Denmark every third month. Large parts of Denmark are now completely free of the disease, and it is calculated that only about 1% of all the herds are infected as compared with 25% only a few years ago. As a rule, a new outbreak can be suppressed, before any noteworthy damage has been done, by the removal of a single animal. Two years from now there should be only a few isolated cases left, if any. A similar note of justified optimism is sounded in the same issue by Martin Kristensen, with regard to human brucellosis, who shows that, while in 1944 there were 261 such cases, the corresponding figure for 1954 was 33. He notes that the frequency of brucellosis in Greater Copenhagen has decreased since 1942 on an even larger scale and concludes that the effective combating of infectious abortion by veterinarians will mean freedom from the human infection.

Cancer of the Breast.—In *Ugeskrift for læger* for May 19 Dr. Erik Andersson states that it is a measure of our uncertainty over the merits of hypophysectomy for cancer of the breast that this operation has hitherto been reserved for advanced cases that have proved refractory to more conventional methods of treatment. He reports a series of six patients who suffered from advanced disease with metastases to the bones and soft tissues. They had undergone operative, radiological, and hormone treatment without avail, and the severe pain from which they suffered required large doses of morphine. Their disease had been diagnosed from one to six years earlier, and their ages ranged from 38 to 68 years. They were warned that no cure could be guaranteed them by hypophysectomy, which was preceded and followed by cortisone treatment. All six patients stood the operation well, but in one of them, a woman aged 55, bilateral parotitis and pneumonia developed on the fifth postoperative day. The extensive metastases in the liver may have contributed to her death. Three to four months after the operation the surviving five patients were still free from pain, which had ceased one to three days after the operation. In all of them the sedimentation rate had approached normal levels, and the blood sugar and basal metabolism also showed improvement. Radiological examinations of the metastases showed no regression. The patients felt somewhat tired and their reactions had slowed down slightly, but there was no other psychic change. Their general condition was much improved, and none of them used morphine derivatives as before. Hypophysectomy may achieve a remission if nothing more.

Celiac Disease.—In *Ugeskrift for læger* for April 21 Mette Hertz reports a follow-up study of 31 children treated for celiac disease. Although 2 of them died of this disease and another 2, of fibrosis of the pancreas, 27 of the patients were treated and reexamined from 2½ to 10 years after discharge from hospital when their ages ranged from 4½ to 13 years. None of the patients suffered from severe dyspepsia on reexamination, but 10 were still subject to a slight degree of dyspepsia from time to time. The mental and physical development of the children was so close to normal that it seems justifiable to hope that the acute celiac disease of early childhood will not usually be followed by permanent ill-effects. In the same issue Dr. C. Hansted confirms some of the important observations made by Dicke and his co-workers who have incriminated gluten as being mainly responsible for celiac disease. Hansted has found that gluten from wheat, rye, and oats is detrimental to children suffering from celiac disease and that wheat-starch, corn flour, rice flour, buckwheat, peas, beans, potatoes, various vegetables, meat, and fish are tolerated. Healthy children from 5 months to 10 years old did not react to the administration of gluten, but some infants less than 3 months old reacted to it with dyspeptic symptoms and one of them with increased fat excretion. Hansted's prolonged fat-balance tests have shown that various forms of pure starch are well tolerated by patients with celiac disease, whereas small quantities of flour containing gluten aggravate the fat absorption and clinical manifestations of the disease.

Of What Do Soldiers Die in Peacetime?—In *Ugeskrift for læger* for May 12 Dr. J. B. Dalgaard has investigated the causes of death of 211 soldiers and 97 officers of the Danish Army and Air Force. Serving as controls were the deaths in a normal cross section of the male population of the same age in Denmark. The average age of the officers being much higher than that of the soldiers, it is not surprising to find heart disease, apoplexy, and malignancy figuring more prominently among the former than among the latter, but it is disquieting to note how frequent suicides were among both the military and the control groups. The death rate from this cause among the soldiers was 16% compared with 19% in the controls. Dalgaard has scrutinized the motives for suicide in the military services in the hope of discovering those that can be eliminated by administrative precautions. He has found the conditions of army service responsible for suicide in only three cases, motives of a more personal character being in the overwhelming majority. Broadly speaking, his investigation shows that deaths from natural causes are more rare among soldiers than among civilians, whereas the reverse is the case with regard to accidental deaths due to drowning, explosions, and traffic accidents.

Death of Professor Abrahamsen.—Prof. Harold Abrahamsen, Denmark's leading urologist, was born in 1885. After serving a surgical apprenticeship in many fields he was put in charge of department D of the Bispebjerg Hospital in 1927. This appointment gave him an opportunity to exercise his gifts as a teacher and to develop orthopedic surgery. In 1934 a trip to the United States did much to promote his interest in urology. His 60th birthday was celebrated by the issue of a *Festskrift* containing many articles of general as well as surgical interest. His death on April 20, 1955, was due to cancer of the colon with metastases.

ENGLAND

Rising Cost of Health to the Nation.—At a meeting of the West London Medico-Chirugical Society, Sir John Charles, Chief Medical Officer of the Ministry of Health, stated that the cost of health to the nation has increased steadily since the National Health Service was established. The cost of running the hospitals in the five year period has increased by 32%; salaries of physicians by 27%; salaries of nurses by 37%; and all other salaries and wages by over 47%. Medical staffs have increased by about 18%, nursing staffs by 14%, and administrative staffs by 12%, although there has been hardly any increase in the total number of hospital beds. These were occupied for about 90% of the time, but the turnover has increased from 6.5 to 7.5 patients per bed per year. Hospital inpatients have thus risen from nearly 3 million a year when the Health Service was started to 3,500,000. Delay in filling beds, in starting diagnostic procedures, in starting treatments, and in discharging patients has led to the uneconomic use of beds. Nearly 19,000 general practitioners now attend about 42,400,000 persons, a ratio of 2,330 patients per panel physician. Sir John urged greater economy in prescribing drugs, which cost 88 million dollars annually when the Health Service began but now cost 118 million dollars, an increase of 34%. The most striking changes were in the proportions of mixtures and proprietary preparations. At the beginning of the Service, mixtures accounted for 34% of all prescriptions and proprietary preparations for 16%. Now mixtures have dropped to 24%, and proprietary preparations have risen to 27%. The cost of the pharmaceutical services, 137 million dollars annually, is now nearly as much as the general medical service, which costs 148 million dollars. The number of prescriptions issued a year is 220 million, or over 5 prescriptions a year for every person making use of the Health Service. The average cost per prescription is 60 cents. Sir John believes that some of this prescribing is not strictly necessary. Smaller quantities of drugs could often be prescribed, and some drugs not used could be returned to the pharmacy instead of being thrown away. Antibiotics are probably being abused. At first their use was restricted to the hospitals and treatment was kept under bacteriological surveillance. They are now used indiscriminately when other and less expensive preparations would suffice. It is doubtful that the average proprietary preparation has a greater therapeutic action than the standard one, but there are undoubted exceptions. If the Health Service is to succeed, waste must be eliminated.

Medical Litigation.—A 35-year-old hemophiliac was awarded additional compensation on account of his disability. While driving his van in London he was involved in a minor collision with an ambulance belonging to the London County Council. The accident, which would normally have been trivial, caused bleeding into his hip and knee joints. He was awarded $8,400 special damages and costs. In a normal person the compensation in this case would have been minimal, but the court took the view that liability was not limited to the normal consequences of a negligent act.

Another case concerned a 9-year-old girl who suffered from burns due to an overturned inhaler containing boiling water. She was under treatment for poliomyelitis in a children's ward and had only limited use of her hands and arms. She was given an inhaler containing boiling water for her bronchitis. This was placed on a tray resting on a pillow over her knees. The inhaler was satisfactorily used for two months in this fashion without mishap. One morning when the nurse left the ward for a few moments the inhaler was upset and the child was scalded. Her mother brought an action for negligence against the hospital. The judge held that neither the nurse nor the hospital administration was negligent, since the positioning of the inhaler and the child had been satisfactory. The nurse was responsible for the care of 16 other children. This opinion was upheld in the Court of Appeal.

A patient complaining of pains in the chest went to a hospital in Liverpool. The physician, who was an intern, gave him two tablets of codeine and told him to return later for radiological examination. A quarter of an hour later the patient was found dead near the hospital, death subsequently found to be due to coronary thrombosis. The patient's widow brought an action for damages against the physician and the hospital. The fact that the intern spent an hour examining the patient showed that, although he made a mistake in diagnosis, he was not negligent. After hearing medical witnesses the judge said that the intern was not negligent in rejecting coronary thrombosis as a diagnosis and therefore was not negligent in sending the patient home. The judge added that even if rest had prolonged the patient's life the prognosis would still have been poor and the patient's future as a breadwinner would not have been bright.

Induced Hypothermia.—On April 1 the Section of Anesthetics of the Royal Society of Medicine debated the present status of induced hypothermia. Dr. C. F. Scurr of London said that hypothermia reduced cell metabolism in a linear fashion so that cells could survive anoxia for longer periods. The circulation of the brain in an animal at a temperature of 77 F (25 C) could be completely occluded for 20 minutes without physiological or histological damage to the brain. Recently a case had been reported of a complete circulatory arrest in a child for 22 minutes at a temperature of 71 F in whom there was no evidence of cerebral damage 30 hours after operation. The hypothermic technique is valuable for intracardiac operations requiring an open heart, temporary occlusion of the venae cavae, and cessation of the circulation; for operations in certain congenital cardiac anomalies in which there is cyanosis or the great vessels need transplantation; in cranial operations involving the temporary arrest of part of the circulation of the brain; in certain neurosurgical procedures; and in operations on the great vessels supplying vital organs. Under normal circumstances the kidneys and spinal cord withstand barely 30 minutes of ischemia, but under induced hypothermia at 80.6 to 82.4 F (27-28 C) up to two hours is tolerated. The advantages to be gained from the technique include (1) reduction of the oxygen requirements of the tissues, since if shivering is prevented oxygen consumption falls; (2) reduction of cardiac work; (3) increase in the coagulation time of the blood, which may be beneficial where thrombosis is a hazard; (4) decrease in the amount of anesthetic needed; and (5) reduction of bacterial and enzyme activity.

There are, however, disadvantages such as the increased irritability of the myocardium, which might cause spontaneous ventricular fibrillation. Because of this, continuous electrocardiographic control is essential, as the appearance of arrhythmias or ectopic foci is a danger signal. The exact cause of fibrillation is not fully understood. A possible explanation is that during hypothermia the formation of acetylcholine is depressed, so that the pacemaker loses its dominance and ectopic foci appear. This explains the beneficial effect of neostigmine in preventing ventricular fibrillation. Hyperventilation, with carbon dioxide absorption, helps to reduce the incidence of cardiac irregularities during hypothermia. Other disadvantages are a shift to the left in the oxyhemoglobin dissociation curve, retardation in the elimination of anesthetic agents, production of the stress response to cold, and increased viscosity of the blood. During rewarming, "after-cooling" may occur owing to the opening up of the peripheral circulation with the transfer of very cold blood to the main circulation. A further fall in the central temperature from this cause may lead to ventricular fibrillation.

Dr. Scurr uses a cooling blanket to lower the temperature of the body. The patient is anesthetized with ether, cyclopropane, or thiopentone-nitrous oxide-oxygen and a muscle relaxant to prevent shivering. The body is then wrapped in a blanket through which water circulates at 35.6 to 39.2 F (2-4 C). Before the desired temperature is reached, warm water is circulated through the blanket to prevent the body temperature from falling any further after the cooling process ceases.

Dr. Cecil Gray of Liverpool described his results with induced hypothermia in 110 patients. In the first 40 patients the French technique, with the use of intermittent doses of chlorpromazine, pethidine, and promethazine, was employed, but this has been abandoned because of the long time needed to lower the temperature and the difficulty in controlling shivering. He now induces light anesthesia with thiopentone sodium, nitrous oxide, and oxygen, prevents shivering with *d*-tubocurarine, and aids cooling with moderate doses of chlorpromazine. The body is cooled with ice bags or a cooling blanket. The patient's position is changed every 15 minutes to prevent pooling of blood and "after-cooling" that commonly occurs in patients with a large surface area. Adequate cooling for one and a half hours can be obtained. Dr. Gray induces hypothermia for intrathoracic, neurosurgical, and general surgical operations. In neurosurgery it may be used for long periods with the patient in the upright position; in general surgery a low temperature protects against the effects of surgical trauma, particularly in poor-risk patients. There were 13 deaths in 110 patients, most of whom were poor surgical risks, but 3 were due to pulmonary embolus. Dr. Gray does not believe that cooling is necessary in patients with congenital heart disease undergoing a Blalock's anastomosis, and investigation of his patients undergoing hypothermia did not confirm the view that pituitary-adrenal responses were modified by cold. On the other hand an investigation in dogs suggested that inhibition of the stress response might account for some of the benefits of hypothermia. Hypothermia is a special technique, with definite risks, and should only be used in specially equipped centers.

Who Pays?—A resident on the lonely Scottish island of Ailsa Craig urgently needed medical attention, and on two occasions the local lifeboat was hired to take him to a physician on the mainland. The Ayrshire Medical Executive Council, under the National Health Scheme, met the expense of $45 out of the physician's local mileage fund on the grounds that if the patient had not come to the physician the latter would have gone to the patient, and an arrangement was made to hire the lifeboat in emergencies and pay for it out of the mileage fund for Ayrshire. The Department of Health for Scotland, however, confirmed the view of its auditors that there was no provision under the National Health Service Act to pay the cost of transporting a patient to a physician and, since the patient had not attended a hospital, the cost could not be charged to the ambulance service. The department suggested that the patient should be asked to pay, but this was ignored. Accordingly the department recommended that the local medical committee be asked to agree to the money being paid out of the mileage fund for Ayrshire. The committee, however, refused to accept this proposal, and the executive council has now, at the suggestion of the Department of Health, made application for the amount to be made a first charge on the mileage fund for Scotland.

Training of Nurses.—Owing to the lack of recruitment in the nursing profession, the Scottish Standing Nursing and Midwifery Committee has suggested an experimental two year course and a three year comprehensive course (Work of Nurses in Hospital Wards, London, Her Majesty's Stationery Office, 1955). The two year course might be tried for five years to assess its value. Student nurses would live in a building apart from the hospital, where they would receive their theoretical training and enjoy a corporate life like a resident university student. Ward training would be received in appropriate hospitals nearby. The nearest approach to this at present is the nurses' home attached to some of the larger hospitals. Student nurses should be carefully selected, should have attained a good educational standard, and should not be less than 18½ years old. In any one center the intake should not exceed more than 30 students a year, and to this number there should be allotted three nurse tutors and two clinical instructors. The latter represent a suggested new grade, with a status of ward-nurse with some experience in teaching. The curriculum should include medical, surgical, gynecologic, psychiatric, pediatric, ophthalmologic, dermatological, otorhinolaryngolical, obstetric, infectious disease (including tuberculosis), operating room, and domiciliary nursing. At the moment teaching is rather haphazard and disconnected; if a nurse is busy or on night duty, she may miss important lectures or demonstrations.

A three year course, the same length as the present one, conducted in a hospital or group of hospitals already training nurses is also suggested. Student nurses would obtain experience in general and specialized nursing fields. This plan would give the student nurse experience in those branches she would not normally encounter in general training, such as mental disease, infectious disease, and tuberculosis. Another recommendation is to try the team system, whereby the patients are divided into groups of 10 or 12, and each group assigned to the care of a small team of nurses, comprising a staff nurse, a nurse in training, and a nursing auxiliary. At the moment twice this number are often cared for by only two nurses by day and one at night. The assignment of a group of patients to such a team has already been tried in some hospitals. The objection is that at off-duty times there are no nurses for a particular group of patients and a relief team has to take over. This calls for a larger supply of nurses than exists at the moment.

Scotland's Health in 1954.—In 1954 there were fewer deaths in childbirth and from tuberculosis than ever previously recorded and a continued lowering of the death rate among children under 5 years of age. The incidence of sickness as measured by attendances at hospitals and visits to physicians is, however, still high. There were more than 2 million new hospital outpatients during the year, with total outpatient attendances reaching nearly 7 million and inpatients numbering 500,000. These figures are for a population of about 5,500,000. There was a rise in the death rate of men aged 50 to 64. In the age group 55 to 65, deaths from respiratory cancer were six times as common as two decades ago, and coronary thrombosis was six and one-half times as common. Bronchitis increased by nearly 25%. These figures are for males. The death rate among females of all ages was lower than two decades ago.

Hospital accommodations and hospital staffs have been increased to cope with the call on the health services by the public. By the end of 1954 beds had increased by 9% compared with figures at the beginning of the National Health Service, and the number of nurses rose from 19,000 to 24,000. There was also a rise in the number of hospital specialists. Running costs of the hospital and specialist services in Scotland increased from 69 million dollars in 1949-1950 to $84,500,000 in 1953-1954. These figures were small in comparison with the increased hospital attendances.

The birth rate, 180 per 1,000 population, was higher than it has been for four years. Infant mortality was 31 per 1,000 births and was the same as in 1953, the lowest on record. The stillbirth rate, 25 per 1,000, was also the same as in 1953. The death rate of 12 per 1,000 population was 0.3 below the average of the previous five years. The number of deaths from the principal epidemic diseases was 254, which was 133 fewer than in the previous year.

Factors Affecting Infant Mortality.—The Social Medicine Research Unit of the Medical Research Council and the General Register Office of London have made a joint inquiry into some of the social and biological factors affecting infant mortality in Britain (*Lancet* 1:341; 395, 1955), which is still high. The number of stillbirths last year was nearly 16,000; deaths in the first week of life numbered about 10,000; and the postneonatal mortality was 8,000. The total of 34,000 deaths was 6% of all deaths, but because they occurred at the beginning of life they represent more than 6% of the total wastage of life caused by untimely deaths. Heady and his co-workers, investigating stillbirths and infant deaths for 1949 and 1950 in England and Wales, found that the stillbirth rate rose with age for mothers of any given parity, but the postneonatal death rate decreased with the age of the mother up to 35 years. The stillbirth rate of infants of mothers of a given age was high for the first-born, fell for the second-born and third-born, and rose thereafter. The postneonatal death rate for infants of mothers of a given age, on the other hand, rose steadily with increasing parity. The neonatal death rate varied less than the other two rates and occupied an intermediate position.

These rates were the same in all social classes. Since large families are associated with a relatively high postneonatal death rate, and since families have decreased in size and the postneonatal death rate has fallen from 91 per 1,000 in 1906 to less than 10 today, it is natural to inquire whether the reduction in family size accounts for an important part of the fall in the rate. Figures collected by the Social Medicine Research Unit workers show that change in family size by itself has only made a small contribution to the postneonatal death rate. The fall must be attributed mainly to increased knowledge by mother and doctor of infant care. The strong relationship that emerges from this survey between maternal age and parity and the postneon death rate is of interest. It is well known that age and parity related to the stillbirth rate. This is not surprising, since th factors are related, and possible connections between the ternal, placental, and fetal pathology may be envisaged. relation between age and parity and later mortality does follow so closely from these considerations. It is more inter ing, therefore, that these factors do not affect postneon mortality and that the effect is so different. Stillbirths and p neonatal deaths thus appear to have different causes and q distinct variations with age and parity. Postneonatal deaths due mainly to infections, and as might be expected the de from infection are related to the mother's age and parity much the same way as the total deaths at this age are. Th trends of postneonatal deaths with age, parity, and social c may furnish clews to the spread and control of these infecti Three possible explanations present themselves: increased portunity for infection in a large family; economic conseque of a large family; and the ability or inability of young mot with large families to cope with their babies. At least t vulnerable groups appear from the data of the survey: mot over 35 bearing first babies have a high risk of stillbirth; mot over 40 of any parity have a high risk of stillbirth; and ba of young mothers with large families for their age have a risk of death in the postneonatal period.

Treatment of Service Personnel on Leave.—It has been ag between the health departments and the service departme in consultation with the representatives of the medical pro sion, to allow under certain circumstances service personne leave and those temporarily away from their units to use National Health Service for treatment after April 1. Form they were debarred from free treatment by general practitio under the National Health Service. Service men and wo who are living temporarily away from barracks or other ser establishments and are more than 2 miles from the nearest s ice hospital or medical unit can now seek medical treatm from civilian physicians within the framework of the Nati Health Service as temporary residents, just as a civilian do when away from home. When service personnel are a for over three months from service medical facilities, it be necessary for civilian physicians to accept them on their manent free patient lists. When they are accepted by physicians for treatment they are entitled to receive drugs appliances free. They will pay 14 cents per prescription like general public, but they will be able to reclaim this from t service medical unit. It has also been agreed that, if under tain circumstances drugs and appliances are not obtaine service medical units, they may be obtained through civ physicians under contract with the National Health Service. this purpose special prescription forms will be issued and be recognized by chemists dispensing under the National He Service. General practitioners treating service personnel u the National Health Service will be paid 74 cents if the pat attends the office, $1.40 for a day visit, and $2.10 for a n visit. In addition, the practitioner will be able to claim 14 c a mile each way in excess of 2 miles for his automobile.

Needle Broken During Injection.—A Scottish Court of Ses has ordered a retrial of a case in which a Scottish woman s a physician for damages because he left a broken needle in body (*Scotsman*, Feb. 5, 1955). At the original trial the wo stated that the physician negligently allowed a needle to br when giving her an injection and that the needle was never covered in spite of several operations. The patient's cou argued that the needle used was not strong enough and the physician should have known this. The plaintiff sued $7,000 damages. For the physician's defense it was not den that the needle broke and it was claimed that the correct t of needle was used. It broke on withdrawal, an accident t was not uncommon and reflected no lack of care or skill the part of the operator. The jury rejected the patient's cl and found the physician not guilty of negligence. The pati appealed against the court's findings, claiming that the ju had misdirected the jury. The judge had stated to the jury his summing up that for the claim to succeed there must be such a departure from the normal and usual medical practice as could reasonably be described as gross negligence. The Court of Session has held that the judge's direction did not accurately describe the legal criterion for liability, that therefore the jury's verdict was void, necessitating another trial, that, in order to prove negligence, whether by a physician or anyone else, it was essential to prove a breach of the duty to take the care that the law required, and that lack of care amounting to negligence will vary with the circumstances. Where the conduct of a professional man is concerned the circumstances are not so clear-cut as in most cases seen in the courts. There is ample opportunity for difference of medical opinion in diagnosis and treatment, and a man is not necessarily negligent because he differs from his professional brethren or because he exhibits less skill and knowledge than others might have done. The true test of negligence in diagnosis or treatment is whether the physician is proved guilty of such failure as no physician of ordinary skill would be guilty of if acting with ordinary care.

Health of Young Children in Britain.—In the last 10 years there have been several child health surveys. The latest survey was carried out under the auspices of the University of London, the Society of Medical Officers of Health, and the Population Investigation Committee. This nationwide survey was based on a study of 5,386 children born in the first week of March, 1946, and is to continue until the children are 12 years old. The present report gives the findings relating to the first five years of life of these children. Some confirm what would be expected, namely, that low social class, high parity of the mother, and premature birth have a detrimental influence on the health of young children. Families of four or more children become progressively fewer in passing from the lowest to the highest social group. The children born later into the family tend to be heavier at birth than those born earlier, but by the age of 2 years they weigh less and are shorter and continue to be so up to the age of 4 years. A comparatively high proportion of underweight children are the later born members of large families. Parents belonging to the lower social groups thus produce a greater number of stunted and underweight children and fewer well-developed ones than those of the upper social groups. The reasons for this are not obvious, but undoubtedly nutritional and possibly genetic factors play a part.

Children in large families and lower social groups suffer more from infectious illnesses early in life. The most important factor here is overcrowding. Thus respiratory infections in the children of manual workers are 1.5 times as frequent in houses with two or more persons to a room as in those with one person to one or more rooms. This is borne out by the greater admission rate for respiratory infections in hospitals in Scotland, where there is more overcrowding than in England. On an average, by the age of 5 years 20% of children have been admitted to hospital at least once; later-born children are admitted more often than first-born. The accident rate is not affected by social class or by the size of the family, although it would be expected that accidents would be more likely to occur in poor homes and in large families, with consequent overcrowding and less individual care for each child.

About a quarter of the mothers in the families covered by the survey are working outside the home. This provides an opportunity to study the opposing influences of increased family income and diminished maternal care. There is no evidence that the health of the children of mothers who work outside the home is in any way inferior to that of mothers who stay at home. There is a greater incidence of infection in the very young children of mothers in the first group, but this may be due to crowding in day nurseries. The psychological trauma, if any, produced by early separation of mother and child when the mother goes to work was not investigated. The survey has confirmed the general impression that it is the most careful and conscientious mothers, and those who need advice least, who use the child welfare clinics, rather than the mothers of large families. In all social strata it is the first-born who is taken more frequently to the clinic; the children of large families are less likely to be taken. The latter do not get regular medical supervision until they reach school age. There may be good reasons for this. The mother of a large family has less time to spare to take her children to clinics, and she may believe that experience has made her competent to deal with the younger members of the family herself. It may be that with increase in the size of the family less care is given to the youngest. The fact that 80% of the first-born and only 50% of the youngest children of large families had been immunized against diphtheria suggests that less care is given to the children of large families. The survey showed that 11% of the mothers gave their children fair or poor care, and they were in the poorest and most overcrowded families with many children.

Clinical Trials on Children.—Mr. T. S. Swingler, Member of Parliament, told the House that newborn babies at Bristol Maternity Hospital were given penicillin, not because they needed it but merely as an experiment. He said that some people allowed their enthusiasm for science to override all moral considerations, and he asked the Minister of Health whether he would make sure that, before further clinical experiments on children were undertaken, the nature of such experiments be reported to his department, so that his medical staff could see that there were adequate safeguards against harmful effects. Mr. Swingler further asked whether the Minister would direct hospital management committees on the ethical principles that should govern the conduct of clinical experiments, with particular reference to the importance of securing the consent of the patient or his legal guardian. The Minister, refusing to ban these experiments on children, said that, if a child of his of any age were in hospital and he was told by people of standing that they were interested in knowing the effects of a perfectly safe clinical investigation and, if it might be that they could learn more and drive still lower the infant mortality in this country, he would be delighted to give his consent. He added that the experiments at Bristol were made under the supervision of the professor of medicine and child health, who had declared them to be perfectly safe.

Other members of Parliament disagreed with the Minister and asked for a directive, but he refused to interfere in what was essentially a matter of professional ethics. Mr. Swingler then urged him to ask the British Medical Association and the Medical Research Council to issue a code of ethics. The Minister replied that he might informally draw the attention of these bodies to the matter if he found it necessary, but both the Minister and members of Parliament were agreed that parents should give their consent to clinical trials on children. One member objected that in the Bristol case this was not obtained, and the Minister agreed that this should have been done.

Report on Britain's Health.—The Registrar General's Report on Britain's Health in 1951 (Registrar General's Statistical Review of England and Wales for 1951, London, Her Majesty's Stationery Office, 1955) shows that by 1951 the birth rate had settled to a level above that in the economic depression of the 1930's. There were 1,060 boys born to every 1,000 girls. The decline in infant mortality and the increase in male survival has resulted in a steady rise in the proportion of men to women over the last 30 years. An increase in the marriage rate resulted, the proportion of married women in the age group 15 to 19 years being 83% above the corresponding figure for 1938. Women are not only more likely to marry now but also they tend to marry younger. The influenza epidemic, which was worst in northern England, accounted for a number of deaths. The disease was so widespread that 647,000 sickness claims were made to the Ministry of National Insurance giving influenza as the cause of absence. This was in a working population of about 22 million people. Deaths from influenza were 8% above those from this cause in 1950. Liverpool had its highest weekly death roll since the cholera epidemic of 1849. The steady fall in mortality, which has been going on since the end of the war, received a check. Infant mortality (30 deaths per 1,000 live births) was the same as in 1950.

In 1951 the number of cases of dysentery, whooping cough, and measles was exceptionally high, but poliomyelitis and diphtheria showed a decline. Food poisoning was reported most often in rural districts and in the larger cities. Except for people over 65 years of age, death rates from tuberculosis fell precipitously; yet the number of reported cases, particularly in the age group

15 to 25 years, were higher than before the war. Some of this increase is accounted for by the large number of minimal tuberculous chest lesions found by miniature mass radiography, as well as by more intensive case finding resulting from the careful follow-up of contacts with tuberculous patients. The mortality and morbidity from tuberculosis in Newcastle, Liverpool, and in the industrial cities of the West Midlands and Wales is still excessive. Bronchitis and cancer of the lungs are more common in Liverpool and the West Midlands, while coronary thrombosis and hypertension are, in general, commoner causes of death in urban than in rural districts. Coronary disease and cancer of the lung continue to rise alarmingly. Cancer of the prostate has declined in men below the age of 64, but for other types of cancer death rates by age groups show little change, except cancer of the breast, the mortality from which shows an increase. Death rates from cancer of the uterus have ceased to fall. The death rate from leukemia among children shows a rise, probably because of improved and hence more frequent diagnosis. It is disquieting to find a rise in the mortality in children under 5 years of age from the accidental swallowing of potentially toxic drugs.

Supplementary Estimates for National Health Service.—This year, for the first time since 1949, the government has asked a supplementary estimate from the Treasury to meet the ary expenses of the National Health Service. For England Wales a further $13,574,400 was asked, and $3,452,400 for Scotland. This sum is to eke out the original estimate of $1,212,400,000 for the current fiscal year. The supplementary estimates would have been larger but for the expected savings of $8,400,000 scattered in small sums under many subheadings. The greatest of these expected savings is $3,385,200 on the hospitals and $1,906,800 on civil defense. The extra expenditure is required mostly for salaries of hospital personnel and for the increased price of goods. There has also been a rise in the cost of the pharmaceutical and dental services. The pharmaceutical services in the whole country account for a further $6,672,400 and the dental services a further $5,322,800. The rise in the cost of the pharmaceutical services is attributed to an increase in the number and average cost of prescriptions, though in England and Wales this has been partly offset by the revised arrangements for pricing prescriptions and paying pharmacists. The rise e cost of the dental services is due to an increasing de- for dental treatment in Britain (Supplementary Estimates, Estimates, and Estimates for Revenue Department, London, er Majesty's Stationery Office).

Specialists and the Health Service.—At a meeting of the Joint Consultants Committee, held at the Royal College of Physicians in January, concern was expressed over the lack of balance between the number of posts open to specialists and the number of residents in training. There appears to be a need for improved planning of the specialist services of the country. One of the pressing needs is for suitable quarters for married residents. The committee stressed the desirability of extending arrangements for the consultant domiciliary service, whereby the patient can be seen by a specialist in his or her own home free under the Health Service, to patients in private hospitals. The attention of the Ministry of Health was drawn to the hardship inflicted on patients of modest means who entered such hospitals for domestic reasons or because of lack of adequate accommodation in hospitals under the Health Service and were thereby deprived of the benefit of free specialist advice. Although the Ministry is considering this proposal, its first reaction was that the obligation to provide a domiciliary specialist service is specifically limited to the patient's home.

Cost of Health Services.—It is estimated that in 1955-1956 an extra $67,631,000 will be spent on the Health Service in Britain, making a total annual expenditure of $1,506,286,400, compared with $1,432,865,837 for the previous year (Civil Estimates for the Year Ending March 31, 1956, London, Her Majesty's Stationery Office). Estimated expenditure under most divisions shows an increase. These estimates make no provision for the hospital building program announced earlier this year, expenditure on which is expected to amount to 21 million dollars in 1957-1958. Payments to general practitioners will amount to only 154 million dollars of the 1.5 billion dollar total, or about 10%. Part of the cost of the Service will be offset by patients' payments of 14 cents per prescription. The gross cost of dental treatment (100 million dollars) is below the peak it reached in the early years of the service. The cost of the pharmaceutical service is 154 million dollars. The rise in the estimated cost reflects a bigger demand by the public for the Health Service rather than a rise in the cost of providing the service. The increased payments to hospitals are largely accounted for by higher salaries and maintenance. A recent increase in the salaries of nurses accounts for another 11,200,000 dollars a year. As there are 8,000 more nurses than a year ago, this will also increase the expenditure on the nursing services.

FINLAND

Thrombosis of the Lower Limbs.—On the initiative of *Nordisk medicin* several physicians in Denmark, Finland, Norway, and Sweden have pooled their experiences with thrombosis of the lower limbs. Dr. Otto Wegelius of Helsinki in the May 12 issue states that heart disease is a common precursor of thrombosis, for it was present in 79 of 178 such cases. Other diseases frequently associated with thrombosis and presumably favoring it are polycythemia vera, hypochromic anemia, pernicious anemia undergoing a remission, lymphocytic leukemia, myelocytic leukemia, thromboangiitis obliterans, infectious diseases, and malignant tumors. With regard to the last named, Wegelius recalls that thrombosis in one leg may be the first manifestation of malignant disease elsewhere in the body. At the Maria Hospital, prothrombin determinations of the blood have been made according to two methods, Lehmann's modification of Quick's method being used up to 1951 and Owren's method thereafter. The latter seems to give the better results, for with the Lehmann-Quick method applied to Dicumarol treatment in 122 patients, the embolism frequency among the survivors was 5.7% and the mortality 1.6%. The corresponding percentages for the 108 patients examined by the Owren method were 0 and 1.8 respectively. With regard to the optimal dose of Dicumarol, Wegelius found that it varies with each patient but that, as soon as it has been determined, the prothrombin percentage need be controlled only once or twice a week.

Zilliacus, also of Helsinki, reports a thrombosis rate of less than 1% in more than 8,000 maternity cases yearly. He has learned to dread thromboses when gestation is complicated by myoma or a toxicosis of pregnancy. The patient with myoma for whom cesarean section is indicated appears to be particularly prone to thrombosis. In most cases characterized by obstetric thromboses the thromboses are small and limited to the pelvis. Their existence is suspected when confinement is followed by several days of a rapid pulse and subfebrile temperature resistant to all forms of treatment with the exception of anticoagulants.

Chlorosis.—In *Nordisk medicin* for April, 1955, Brummer and Levanto report five patients with chlorosis treated in the course of three months. It is almost with an apologetic air that so demoded an ailment is discussed in a medical publication. The authors explain the apparent rarity of chlorosis by assuming that many of the patients formerly given this diagnosis are now considered to have pulmonary tuberculosis, bacterial endocarditis, rheumatic fever, and the like. They regard chlorosis not as a disease in a class by itself but as an essential hypochromic anemia of puberty, a contributory factor being an increased need for iron at this age. The healthier lives led by the present generation may partly account for the rarity of chlorosis in modern times.

Prevention and Treatment of Cholelithiasis.—Internists have been inclined to regard the treatment of cholelithiasis almost exclusively as a surgical matter according to Erik Adlercreutz in *Nordisk medicin* for May 12, 1955. Early recognition, however, may lead to effective prevention. With this object in mind the author has scrutinized the records of 192 patients with cholecystitis (163 women and 29 men) treated in his private practice. The records showed that the cholelithiasis had in many patients been preceded by certain conditions or diseases that are forerunners of gallstones. Among his 163 female patients there was a history of gynecologic diseases in 90, of infections of the urinary tract in 85, of periocular hyperpigmentation in 90, of headache in 93, of rheumatic pains in the neck, right shoulder, and arm in 58, of dyspepsia in 125, and of heart disease in 45. In 10 patients as many as 6 of these forerunners of cholelithiasis figured in the same records, but in 75 the number of forerunners was 3 or less.

ISRAEL

Iron Deficiency Anemia.—At the 18th meeting of the Israel Medical Association several papers dealt with iron deficiency anemia. De Vries and Izak reported that they estimated the hemosiderin content in sections of bone marrow obtained by aspiration biopsy from 8 normal control patients and 39 patients with various hematological disorders. In hypochromic anemia due to iron deficiency the hemosiderin content was low, but in macrocytic anemia with normal mean corpuscular hemoglobin concentration and in hemolytic anemia it was excessive. Hemosiderin must be considered as a dynamic form of stored iron, readily releasing iron when required for the production of hemoglobin. Even in severe iron deficiency anemia small amounts of hemosiderin may be present in the bone marrow. In iron deficiency anemia iron may be deposited in the bone marrow as hemosiderin following iron administration before the hypochromia is corrected. When iron is being utilized for hemoglobin production, a marked drop in bone marrow hemosiderin can be demonstrated within 24 hours. Excessive amounts of bone marrow hemosiderin may be associated with abnormal amounts of iron in the body.

Y. Matoth and M. Aschner reported a series of 168 children with anemia of which 94 cases were due to iron deficiency. Iron deficiency anemia constituted 69% of all cases of anemia, excluding hemolytic disease of the newborn, in the age group from birth to 3 years. Undernutrition was prominent among etiological factors contributing to the production of iron deficiency anemia. Sixty-eight per cent of patients with iron deficiency weighed 30% or more below the average for their age; 65% gave definite histories of diets deficient in iron, whereas in 41% a history of recurrent infection, chiefly diarrhea, was obtained. The percentage of children born to mothers who had had six or more previous deliveries was 27 and that of premature infants and twins was 22.5. Response to ferrous sulfate given orally was good in 64 of 67 patients in whom the follow-up period was sufficient for the evaluation of the results of treatment. The average daily rise in hemoglobin was 0.25 gm. per 100 ml. Although deficiencies in several nutritional factors were present in the examined group of undernourished children, the iron deficiency accounted for the anemia.

Changes of Serum Total Lipids.—Cases of myocardial infarction or other manifestations of atherosclerosis are rare among Jews of Yemenite origin who form about 6% of Israel's population. Dreyfuss reported two patients with myocardial infarction among Yemenite Jews but noted that one of the patients had lived in Israel for 35 years and the second for 21 years. Among the 650 patients with myocardial infarction admitted to the Beilinson Hospital in the period 1936 to 1954, none were of Yemenite origin, according to a review of M. Toor and his coworkers reported in the *Bulletin of the Research Council of Israel* (4:202, 1954). One Yemenite Jew admitted to the Beilinson Hospital, however, did suffer from generalized atherosclerosis. This patient had been living in Israel for 38 years. Accepting the general idea that a direct relation between the concentration of the serum cholesterol and the development of atherosclerosis may exist, the authors determined the values of serum cholesterol, total serum lipids, and phospholipids in two groups of Yemenite Jews: 75 who had lived in Israel for 20 years or more (old immigrants), and 192 who came to the country 3 to 5 years ago (new immigrants). In each age group for both men and women the level of total lipids, total cholesterol, and phospholipids was higher in the old immigrants.

Brunner and his co-workers examined four groups, each consisting of 50 normal men in the age group of 35 to 60 years (*Harefuah* 48:4, 1955). The four groups were: Ashkenazi Jews; Yemenite Jews living in the country more than 30 years; Yemenite Jews living in Israel 4 years and less; and Arabs. The authors also presume that the morbidity and mortality of myocardial infarction and arteriosclerotic vascular disease among Ashkenazi Jews in Israel is similar to that of the general population of the Western world; however, myocardial infarctions are rare among Jews from Moslem countries and almost never are found among Yemenite Jews. The cholesterol levels as well as the phospholipid ratios were particularly low in recent immigrants from Yemen. The Yemenites living in Israel for more than four years had statistically significant increases in cholesterol values but no change in their phospholipid levels. Thus, while the cholesterol levels were lower than those of Ashkenazi Jews, the ratios were similar. Both cholesterol and phospholipid levels were about equal in both the Arabs and the old Yemenite Jews. The factors responsible for these differences in serum levels may be related to differences in nutritional habits and the increased stress of modern civilized life. The rise in cholesterol levels among Yemenites with lengthening stay in Israel must be considered as a typical reaction of acclimatization.

New Hadassah University Hospital Psychiatry Department.—The first batch of patients have now been received by the department of psychiatry at the Hadassah University Hospital in Jerusalem. According to Prof. Milton Rosenbaum of Cincinnati University, the acting director of the department, the major goal is to produce more psychiatrists familiar with dynamic psychiatry. Professor Rosenbaum has come for a year to guide the establishment of the unit. Once a week there will be conferences with the medical services on psychosomatics and a pediatric session jointly with physicians of the children's wards. A group of psychiatric specialists, some from the Hadassah Medical Organization, have volunteered their help in teaching and guiding the growth of the unit. They complement a full-time staff of three physicians, a psychologist, an occupational therapist, a social worker, and nurses. Professor Rosenbaum stated that the department would have a psychoanalytic orientation.

ITALY

Medical and Surgical Convention.—At the Medical and Surgical Convention in Montecatini in May, Professor Campanacci of the University of Bologna reported on 120 patients in whom a gastric resection was made. The results were excellent in 60% of the patients, satisfactory in 28%, and unsatisfactory in 12%. They were definitely worse in women. Postoperative complications included the dumping syndrome, the dyscrasic-edematigenous syndromes, the hepatobiliary syndromes, and the hematological syndrome. The speaker considered the disappearance of pain in most patients and the reduction in the secretion of hydrochloric acid as favorable signs and a neuroendocrine-vegetative lability, which consisted of hypoadrenal hyposympathicotonus, dysproteinemia, and early or late postprandial syndromes, as an unfavorable sign. He said that the postoperative neurovegetative lability is not a new finding in patients who have undergone resection, but it is the accentuation of a preexisting condition that is characteristic of patients with ulcer. The postprandial syndromes are caused not only by alterations of the glucide, electrolyte, and protein balance but also by a reduction of the reservoir function of the stomach. In view of this, a new therapeutic regimen consisting of a diet that is regulated qualitatively and quantitatively and taken at proper intervals should be used; the foods allowed should not be too fluid, too warm, or too cold; sweets should be avoided; carbohydrates should be restricted; an adequate quantity of fats should be maintained; animal and vegetable proteins should be increased; a constrictive girdle should be worn; and the habit of lying down after a meal to avoid the onset of those postprandial syndromes that are mainly of a mechanical nature (dumping syndrome) should be practiced. It is therefore necessary to control the eventual depletion of amino acids, iron, digestive enzymes, vitamins, hormones, and especially of desoxycorticosterone acetate, cortisone, gastric mucosa derivatives, calcium, and vitamin B_{12}.

Professor Forni and his co-workers reviewed the results obtained in 1,000 patients. Gastroduodenal resection aims at removing the ulcerative lesion and decreasing the gastric secretion of hydrochloric acid. The removal of the lesion is achieved in all the patients, but hypochlorhydria is achieved in only 50 to 60%. The speaker's results were mediocre or poor in 15%. The best results are obtained in gastric ulcers (93.8%) and duodenal ulcers (81.5%) in men; the results are less satisfactory in women. Good results are also obtained in patients with ulcers complicated by stenosis, hemorrhage, and perforations. Success is more easily attained in middle-aged and aged patients and is less common in patients under 20. The best results are observed in those patients whose preoperative hyperchlorhydria was due to a histaminic stimulus. The absolute indication for resection is a duodenal ulcer that is accompanied by a complication or by a syndrome resistant to all medical treatment. A relative indication is the patient's age. Contraindications are a complicated ulcer in a young patient, a constitutional state of anxiety, and tuberculosis.

SWEDEN

Barbiturate Poisoning.—Profound changes have taken place in the treatment of barbiturate poisoning in recent years. Dr. B. Herner in *Nordisk medicin* for May 5 reports 118 patients with acute barbiturate poisoning who were treated during the period 1950 to 1954. Twenty were so serious that the patients were unconscious for more than 24 hours, but only four died. Much of the credit for this high recovery rate goes to the prevention of infections by antibiotics, the prevention of shock by the parenteral administration of fluids, blood transfusions, oxygen inhalation, and keeping the respiratory passages clear. Another factor seems to be the modern switchover from long-acting to rapidly acting barbiturates. Herner urges his colleagues to promote this trend, and he looks forward to the time when the soporifics most in use will be derived from the antihistamine group instead of the barbiturate group. Wisborg and Schuback in *Svenska läkartidningen* for May 6 report 239 patients with barbiturate poisoning in the period 1945 to 1954. In the first half of this period such patients constituted only 0.4% of all the admissions, whereas the corresponding figure for the second half of this period was 1.5%. The cause of death in the 13 who died was bronchopneumonia in 6, heart failure in 5, pulmonary embolism in one, and uremia in one. The authors condemn the use of long-acting barbiturates, the slow excretion of which is one cause of death in these patients. While the men were outnumbered by the women in the ratio of 1:1.69, the mortality rate for men was only 4.3%, whereas that for women was 6.1%. The distribution of these 239 cases by months was surprisingly even, but May was the worst month, and the summer was worse than the winter.

Chlorpromazine in Psychiatry.—Dr. O. Hagnell and his co-workers in *Nordisk medicin* for May 5 reported 130 psychotic patients of recent and of long standing who were given 50 to 100 mg. of chlorpromazine three times a day. A total of between 2 and 5 gm. were given by injection followed by a total of between 5 and 10 gm. by mouth. The authors concluded that this treatment should not be considered ineffective till it has been tried for at least six weks. They have observed several severe complications, which in two patients consisted of great anxiety, promptly ceasing when the drug was withheld. In 3 patients there was evidence of serious damage to the liver, and in 68 the sedimentation rate increased more than 10 mm. per hour during the treatment. In spite of these complications this treatment evidently deserves further trial provided careful laboratory control is assured. In the same issue Dr. S. Cronqvist and his co-workers reported 54 patients with psychoneurosis who were treated with the same drug. This treatment began with injections of 25 mg. three times daily, the dosage being increased during the following few days according to the reaction of each patient. The results were characterized as very good in 21 patients who suffered mainly from tension, restlessness, and anxiety. A patient who had suffered for nine months from a permanent stat of terror after a mental trauma was cured after only a few day of this treatment, without any signs of relapse after it was discontinued, but as a rule the improvement could be maintaine only by continuous treatment. Because of the fairly high incidence of such complications as jaundice, urticaria, and angioneurotic edema, the authors insist that the indications for chlorpromazine treatment should be carefully considered and th patients informed of the risks before it is attempted.

SWITZERLAND

Annual Meeting of the Swiss Society of Internal Medicine.— the meeting of the Swiss Society of Internal Medicine in Genev in May Professor Gsell of Basel stressed the prophylactic a ministration of antibiotics for acute articular rheumatism. Whe deciding on the administration of an antibiotic the physici must ask himself: 1. Is the antibiotic absolutely necessary the treatment of this patient? 2. Which one is indicated? How long and in what doses should it be administered? 4. Do the antibiotic threaten to influence the body's defense reactio such as in scarlet fever, leptospirosis, or salmonellosis? 5. the development of resistant organisms to be expected? 6. C the antibiotic produce toxic side-effects? Prof. G. Bickel Geneva stated that side-effects produced by antibiotics may caused by the inherent toxicity of the products used, by sen tivity reactions on the part of the patient, or by a biologi effect secondary to the action of the antibiotic on the mic organisms.

Professor Sheehan of Liverpool described the characterist of the pituitary insufficiency (not anorexia nervosa) that deper on destruction of the anterior lobe by ischemic necrosis duri childbirth. He is opposed to the classic description of hyp pituitary cachexia, which he claims is an imaginary disease. a woman has significant cachexia, it is highly probable th her pituitary gland is entirely normal. True pituitary insu ciency is characterized by a normal nutritive state; the brea have a normal contour and there is no loss of hair from t head, although pubic hair is affected. These women are p and pigmentation of the areola papillaris is lacking. The syn toms of hypopituitarism resemble those of myxedema in so respects: decreased basal metabolic rate, sensitivity to cold, most total absence of sweating, marked mental torpor, puffin of the face, and anemia. The administration of thyroid produ an effect only on the basal metabolism, but the addition cortisone makes the other symptoms disappear. The resu obtained with cortisone therapy seem to indicate that ma symptoms usually attributed to thyroid insufficiency are rea due to adrenal insufficiency. The pallor of these patients explained by atrophy of the antehypophysis, which is unal to secrete intermedin.

Professor Luft of Stockholm reported on the endocrine ficiencies following hypophysectomy, which he performs the treatment of cancer of the breast, prostate, and certain ty of diabetes and hypertension. Two or three weeks after operati thyroid function is rapidly decreased and there is a fall urinary elimination of the 17-ketosteroids and the cortico Some atrophy of the genitals is noted, but there is no cache These deficiencies can be compensated for by the combin administration of cortisone and thyroid extract.

Professor Loeffler of Zurich stated that anorexia nerv manifests itself by a loss of weight that occurs mostly in wom and is due to insufficient alimentation because of an obstin refusal to eat. In young girls it is the manifestation of an u conscious desire to gain attention. Some of these patients e secretly and refuse all food in public. It is amazing that t patients are not shocked by their frightening appearance. On t contrary, they find themselves interesting and attractive. Wh anorexia follows a pregnancy complicated by hyperemesis, is difficult to make a differential diagnosis from Sheehan's sy drome. Hormone therapy has no effect, except insofar as exercises an embryonic psychotherapeutic action. The disea is properly treated by psychotherapy.

GOVERNMENT SERVICES

R FORCE

rgeon General Honored.—During the convocation ceremony the American College of Chest Physicians, held in Atlantic y on June 4, the surgeon general of the U. S. Air Force, jor Gen. Dan C. Ogle, was presented with an honorary lowship in the college, and on June 12 at Eureka, Ill., during centennial commencement of Eureka College, he was given entennial citation for outstanding achievement. He graduated m Eureka College prior to attending the medical school of University of Illinois.

rsonal.—Brig. Gen. Otis O. Benson Jr., a flight surgeon with U. S. Air Force Medical Service, on June 6 received an norary degree of doctor of science from the faculty of Mon- a State University. This distinction was accorded him in ognition of his being one of this country's leaders in the vancement of aeronautics through medical research.

AVY

mposium at New Hospital on Guam.—The naval hospital on am, June 21-23, successfully completed the first medico- litary symposium conducted by the Navy outside the conti- ntal limits of the United States. Capt. Herman A. Gross, mmanding officer of the naval hospital, was chairman and st for the meeting of military and civilian doctors from the arianas, Okinawa, the Trust Territories, Japan, and the Philip- es. Rear Adm. F. C. Greaves, M.C., district medical officer, presented the surgeon general of the Navy. The Hon. Ford Q. vidge, governor of Guam, welcomed the guests to the island. e consultants for the symposium were Drs. Winchell M. Craig, ofessor of neurosurgery at the Mayo Clinic, Rochester, Minn.; uce Anderson, director of anesthesia, Samuel Merritt Hospital, kland, Calif.; T. Eric Reynolds, former surgical consultant Admiral Halsey; Gerald Gray, plastic surgeon, Oakland, lif.; Edwin Bannick, Seattle; William Rogers, clinical professor surgery, Stanford University School of Medicine, Stanford- n Francisco; Walter Work, otolaryngologist consultant at tterman Army Hospital, San Francisco; Harry Walker, former ief of orthopedic service, U. S. Naval Hospital, Oakland, lif.; and Capt. W. Van Zile, D.C., chief of dental service, d Commander Leonard Barber, M.C., radiologist, U. S. Naval ospital, Oakland, Calif.

ew **Director of Pathology Institute.**—The Department of efense announces the appointment of Capt. William M. lliphant, M. C., U. S. N., as the director of the Armed Forces stitute of Pathology, Washington, D. C. The Armed Forces stitute of Pathology serves as the central laboratory of pathol- y for all the armed services and for the Veterans Administra- on and on a voluntary basis for the U. S. Public Health Service, e Atomic Energy Commission, and other federal medical encies. The 54-year-old veteran Navy pathologist succeeds rig. Gen. Elbert DeCoursey, M. C., U. S. Army, whose tour duty ends on Aug. 1 and who will become commandant of e Medical Field Service School at Brooke Army Medical enter, San Antonio, Texas. Captain Silliphant, deputy director nce 1952, was nominated by the board of governors of the rmed Forces Institute of Pathology, composed of the surgeons eneral of the Army, Navy, and Air Force. This assignment is ormally for four years and rotates in order among the Army, lavy, and Air Force.

Captain Silliphant was commissioned in the Medical Corps of e Navy in 1930. In 1933 he began postgraduate study in athology at the Naval Medical School and since then he has erved as pathologist and laboratory officer at various naval ospitals. Assigned to the Philippine Islands one month before the Japanese began their conquest of those islands, he was captured and interned for 37 months. Returning home after liberation of the Philippines in 1945, he served as chief of medicine and pathologist at the Naval Hospital, Long Beach, Calif., and in 1947 was transferred to the Naval Medical School, Bethesda, Md., where for five years he was director of laboratories, executive officer and consultant to professional division, Bureau of Medicine and Surgery. In 1953, he was sent to the Far East for survey studies on Korean casualties, with particular reference to the influence of body armor on war wounds. Captain Silliphant is a diplomate of the American Board of Pathology. He has contributed articles on bronchogenic carcinoma, eosinophilic granuloma, wound ballistics, and comparative studies of the Kahn and cardiolipin tests for syphilis. For distinguished service while a prisoner of war, the Secretary of the Navy issued him the Navy Letter of Commendation. He was also awarded the Army Distinguished Unit badge, Philippine Defense, 1941-1942; and, from the Philippine government, the ribbons of Philippine Defense, Philippine Liberation, and Philippine Independence.

New Editor Appointed.—Capt. Bennett F. Avery, M. C., has been designated director of the Armed Forces Medical Publication Agency. As director of the agency, Captain Avery will be the editor of the *United States Armed Forces Medical Journal* and the *Medical Technicians Bulletin*. He succeeds Col. Robert J. Benford, U. S. A. F., who has been assigned to duty in the office of Dr. Frank B. Berry, the assistant secretary of defense (health and medical).

Personal.—Rear. Adm. Bartholomew W. Hogan, M. C., surgeon general of the Navy, received the honorary degree of doctor of science from Boston College and Tufts University recently.

PUBLIC HEALTH SERVICE

Dr. Sebrell to Retire from Service.—Assistant Surgeon General William H. Sebrell Jr., who has been director of the National Institutes of Health, will retire on Aug. 1, following 30 years of service. He will be succeeded as director of the National Institutes of Health by Dr. James A. Shannon, presently associate director of the Institutes. Dr. Sebrell has accepted appointment as research consultant to the American Cancer Society and will direct the society's institutional research grants program. Commenting on Dr. Sebrell's retirement, Surgeon General Scheele said: "His directorship has been invaluable in bridging a complex period of transition, not only in our own expanding research program but in medical research the world over. Dr. Sebrell, drawing upon a distinguished background of active research and administration, has been one of the nation's leaders in the new research attack on disease, particularly the chronic diseases, such as heart disease, cancer, and mental illness." Dr. Sebrell has earned a world-wide reputation as a medical scientist, particularly through his studies on the B vitamins. He has also received scientific acclaim for important findings in the dietary cause and treatment of liver disease, the effect of pantothenic acid deficiency on the adrenal glands, the nutritional effects of sulfonamides, and the cause and treatment of blood abnormalities.

Dr. Shannon, the new director, has been associate director since November, 1952. He is also chairman of the service's technical committee on poliomyelitis vaccine. Prior to 1952, he was associate director in charge of research at the National Heart Institute. From 1946 to 1949, he was director of the Squibb Institute for Medical Research. He then came to the Public Health Service as a commissioned officer.

Dr. Shannon is a member of the American Physiological Society, the American Society for Clinical Investigation, the Society for Experimental Biology and Medicine, the Harvey Society, and the National Malaria Society. He is a member of the Alpha Omega Alpha and Sigma Xi professional fraternities.

CORRESPONDENCE

LOCAL INJECTION OF HYDROCORTISONE TERTIARY-BUTYLACETATE IN SKIN LESIONS

To the Editor:—In spite of the efficacy of topical applications of ointments and lotions of corticosteroids in certain common skin conditions, such as infantile eczema, atopic dermatitis, pruritus ani, and mild contact dermatitis, direct intralesional injections are still necessary and practical in treating lesions that do not respond readily to topical applications. In this list are small patches of psoriasis, especially on exposed areas; small patches of discoid lupus erythematosus, still persistent after systemic therapy with chloroquine or chlorochloroquine; keloids; localized myxedema; localized scleroderma; granuloma annulare; and small areas of leukemic lesions or other specific cutaneous lesions of the lymphomas. A second group of lesions for which injections may be used includes those that may respond in part to topical applications, especially small areas of the deep lesions of localized neurodermatitis.

We have used suspensions of hydrocortisone acetate and alcohol with an ordinary syringe and needle, also in the cartridge type of syringe (Goldman, L., and others: *A. M. A. Arch. Dermat.* **71**:157 [Feb.] 1955), and with Hypospray jet injection apparatus. Noting the good and persistent response of hydrocortisone tertiary-butylacetate in intra-articular injections by J. L. Hollander (*Ann. New York Acad. Sci.* **61**:512 [May 27] 1955), this suspension has been used by us routinely, in both clinical and investigative studies, for the last past five months. Fifty-eight injections have been given, varying volume from 0.1 to 0.3 cc. (25 mg. per cubic centimeter). The suspension is easier to inject than the suspension of hydrocortisone acetate. A 27 gauge needle may be used for facial lesions and a 25 gauge needle elsewhere. The material appears to be as effective locally as the hydrocortisone. The same essential histopathological changes have been found in the skin of man as have been found with hydrocortisone and its other analogs. Histochemical studies also show the same changes in the tissue (Goldman, L.: *Ann. New York Acad. Sci.* **61**:520 [May 27] 1955). The crystals may persist in site for at least five to six months. This fact must be considered when local injection therapy is used.

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ADENOIDECTOMY

To the Editor:—May I reply to Dr. R. T. Barton's protest (The Journal, June 11, page 505) of my statement that "deafness, recurring otitis media, and mastoiditis are rarely improved by adenoidectomy," a quotation taken from an abstract in The Journal Dec. 11, 1954, page 1461. In disagreeing with the above statement, Dr. Barton is undoubtedly voicing an opinion generally held; however, my article and The Journal's abstract of it would have served little purpose if they had not mentioned the fallacies of the prevailing belief. Many outstanding men believe that progressive deafness, recurring otitis media, and mastoiditis usually are caused by chronic sinusitis and that adenoidectomy not only fails to improve these conditions but may predispose to them. In the original article (Harmful Sequelae of Adenoidectomy in Children with Chronic Sinusitis, *Arch. Pediat.* **71**:233, 1954) there are 64 references and many quotations regarding the protective value of adenoids against the purulent secretions of sinusitis in the production of the above conditions by sinusitis. Those quoted include H. B. Lemere, T. B. Layton, A. D. Kaiser, G. B. McAuliffe, E. C. Marantz, J. A. Glover, J. Wilson, M. M. Cullom, H. M. Taylor, G. E. Martin, J. Crooks, and A. G. Signy.

The adenoid protects not only the upper but also the lower respiratory tract. Kaiser's controlled study, now a classic, has shown that removal of tonsils and adenoids increases the likelihood of lower respiratory tract symptoms. As my article state these complications are seen only in children with sinusitis who protective barrier, the adenoids, has been removed. It seen neither fair nor open-minded for one to protest a stateme appearing in an abstract when he has not read the original artic to determine how the conclusion was derived.

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IODIDE AND ASTHMA

To the Editor:—The Correspondence article by Dr. Leon Ung entitled "Orders for Patients with Asthma," which appeared the June 11, 1955, issue of The Journal, page 505, was exceller I would, however, like to make a correction and an additio Under direction 7, for severe cases, Dr. Unger orders pota sium iodide drams 5 and parenthetically states it equals 8.86 g This is incorrect, as 5 drams equal 300 grains or approximate 20 gm., a difference in his dosages of almost 6 grains per te spoonful between his dram and metric orders. My preferen is to start with the smaller dose, to determine the tolerance the patient for iodides, as they can at times be very irritatin The list might include sodium iodide, intravenously admin tered, 15.5 grains (0.97 gm.) in 10 cc. distilled water, which useful in bronchial asthma due to thick mucus plugs. I ha seen status asthmaticus cases dramatically relieved with t expulsion of large amounts of thick mucus by its use. All phy cians should be familiar with Dr. Unger's fine article, especial the point on not giving morphine to one in an asthmatic attac

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THE CADUCEUS

To the Editor:—I realize that The Journal staff is not sponsible for the inaccuracy that appears on page 506 of t issue of June 11, 1955. A notice on that page refers to a n insigne to be worn by medical and dental officers of the Force. A serpent is not a caduceus. The caduceus (there is or one) is the winged staff of Mercury, who was the Greek patr god of speed, of messengers, of merchants, of thieves, and othe The snakes entwined about Mercury's staff are represented the position of coitus, signifying cooperation and fertility. I ha never known how the erroneous association of the caduceus wi medicine arose, but it persists even now in many areas. As y well know, the American Medical Association long ago cc rected this error and adopted as its emblem the staff Aesculapius, the same as that on the new Air Force medic insigne.

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INSURANCE FORMS

To the Editor:—In our increasingly complex civilization, ste to safeguard the security of our population have very rightl increased progressively. This is reflected by the number of form for insurance companies that the physician is constantly calle on to fill out. Although this is an important and necessary pa of his work, it would be made much easier if the insurance com panies, instead of submitting single forms to fill out, would sub mit duplicates so that file copies might be kept. I am sure tha no insurance company would fill out any form without havin a duplicate form to keep in its own file. I cannot understan why they expect the physician to conduct his practice in suc a slipshod manner. I have adopted the policy in my office o not filling out insurance forms unless they are submitted in duplicate. How do other readers feel about this?

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MISCELLANY

IE PATIENT'S STAKE IN ACCREDITATION

bert S. Myers, M.D., Chicago

Reprinted with permission of the author from the Bulletin of American College of Surgeons (*July-August*).—Ed.

Hospital accreditation is the hallmark of patient safety. It is official recognition of a hospital's voluntary conformation desirable standards of adequate patient care. It is a reliable, sily accessible guide for public use in the selection of a hos- al. Although accreditation is to the hospital world what rling is to silver, it is a strange and unknown term to the neral public.

There are three main reasons why the public knows so little out the meaning of accreditation. In the first place, patients ect doctors rather than hospitals, and their physician's staff pointments usually determine the patient's choice of a hos- al. This is a well-deserved tribute to the medical profession, t it does not always lead to the selection of the accredited spital and an appreciation of its value by the patient.

Secondly, the program of hospital accreditation is a mere ant which attained its growth during a hectic period of de- ssion, wars, and fabulous medical scientific discoveries. That program did not perish is a tribute to the American College Surgeons, which conceived it in 1918 and carried it single- nded through the next 35 years. In 1952 the program of reditation was transferred to the Joint Commission on creditation, which is composed of representatives from the nerican College of Physicians, the American College of Sur- ons, the American Hospital Association, the American Medi- Association, and the Canadian Medical Association.

The Joint Commission adopted the standards found to be sirable by the College during its years of administering the ogram and is now in the process of clarifying, revising and engthening certain portions of these. Twenty physicians, ll-trained in all aspects of patient care, are supplied to the int Commission by the parent organizations for inspection its to hospitals in all parts of the United States and Canada. the hospitals in these two countries which have applied for reditation approximately 3,200 have met the rigid require- nts. [*There are now 21 physician-surveyors; and as of De- nber 31, 1954, a total of 3,513 hospitals were accredited by Joint Commission.*]

The third and main reason for the lack of public knowledge ncerning accreditation is the inherent conservatism of the edical profession and hospitals and their aversion to publiciz- g their accomplishments. Such reticence is often commend- le, but the best interest of the patient has not been served by ch unnatural reserve. Every opportunity should have been ized to inform the public of the demonstrated worth of accreditation in guarding the welfare and safety of the patient.

Accreditation is not a device to enrich the coffers of hospitals the pockets of doctors. Accreditation has cost hospitals an told amount of money; it has multiplied the work of the medi- l profession; it exacted approximately $2,000,000 from the llows of the American College of Surgeons during the first years; and it now requires half a million dollars each year om the funds of the agencies composing the Joint Commis- on. All this has been done gladly and for one purpose only e benefit of the patient. Surely these facts are worthy of the lling.

What more should the patient be told about accreditation? is proper to inform him of the unceasing efforts taken to rovide him with a suitable, sanitary physical plant which is dequately protected against fire and explosion hazards. He should be told of the need for proper diagnostic facilities, including x-ray and laboratory departments. Mention should be made of the many instruments required to maintain a surgical department and the equipment necessary to sterilize these instruments and other materials. He should know about the hospital pharmacy, which is often as extensive and expensive as the corner drug store. Few patients will realize that the hospital dietary department often serves more meals daily than many hotels in the community. He will be surprised to learn that special diets must be prepared for the patient with diabetes, heart disease, or intestinal trouble. He does not realize the extensive planning and multiple safeguards necessary to protect the newborn infant. Each such activity is but one facet of the hospital.

There are also the many highly trained people required for the adequate care of the patient—record librarians, nurses, dietitians, x-ray and laboratory technicians, pharmacists, physiotherapists, occupational therapists, social service workers, maintenance men, housekeepers, purchasing agents, maids, orderlies. Hidden below the surface, like the main body of an iceberg, many of these vital personnel are not visible to the patient during his hospital stay, but they are an absolute necessity, and they cost money.

Many uninformed patients who complain about the high cost of hospital care compare hospitals with hotels, which make money with lower daily charges. The public should be told about the costly and unique equipment required by hospitals and the many specialized personnel needed to serve the patient 24 hours a day. The patient doubtless has never thought of the expense involved in guarding his life and health, and it has never occurred to him that such profitable sidelines as liquor sales are not revenue producers for hospitals.

What is required of the medical staff of an accredited hospital? The program of accreditation has conclusively demonstrated that the medical staff of the hospital holds the key to accreditation through a series of self-imposed controls or standards designed to protect the patient. This voluntary effort of the profession to maintain adequate standards of patient care is usually not apparent to the public.

Detailed histories and physical examinations must be made for the protection of the patient. Complete medical records must be dictated promptly, operative notes written and consultations recorded. Radiologists are required for searching diagnostic studies, and every bit of tissue must be examined by the pathologist. Skilled anesthesiologists are required to administer the anesthetic and are expected to follow the patient until he recovers from anesthesia. Such activities of doctors are not haphazard occurrences. They are part of the integrated activities of an organized medical staff found in an accredited hospital.

Little does the patient realize the time and effort demanded of the physician to serve as a member of the five essential medical staff committees required for accreditation of a hospital. The executive committee sets staff policy and provides discipline; the credentials committee assesses the qualifications of physicians and assigns them to privileges and to departments; the joint conference committee consults with the governing board on problems of interest to the board and medical staff; the medical records committee examines countless records, evaluates their contents and assesses the care of the individual patient; the tissue committee reviews every operation and decides the justification for surgery.

In order to inform the medical staff about the quality of patient care so that it may be maintained at the highest level, physicians are required to meet at regular intervals. There are monthly medical staff meetings, weekly or monthly departmental meetings and clinical pathological conferences, to say nothing of the nonrequired but equally educational county, state and national medical meetings and conventions of various specialist societies.

Does the patient know that accreditation requires a competent administration, composed of a trained and experienced administrator and a governing board selected for its knowledge, interest and experience in hospital affairs? To this segment of the hospital falls the grave obligation of assuming moral and legal responsibility for the welfare and safety of the patient in addition to the financing and direction of the hospital.

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[Presented at the Catholic Hospital Association's thirty-ninth annual onvention, Atlantic City, New Jersey, May 19, 1954; and, with amend- nents, reprinted with permission from *Hospital Progress*, August, 1954.]

And, finally, the patient should be told that accreditation places the responsibility for medical ethics squarely on the medical staff and the administration of the hospital. This is vitally important to the patient for adequate control helps protect his health, his life and his pocketbook. Unethical or unprofessional conduct consists of more than unjustified surgery or the unnecessary or unsanctioned removal of normal organs. Fee-splitting and ghost surgery exist in some hospitals, regardless of size, location or religious affiliation. All these evils must be regarded as morally wrong, and it is time for the medical profession and hospitals to close ranks to eliminate those who violate the principles of medical ethics and bring discredit on honest physicians and hospitals.

It is heartening to witness the recent vigorous demands from all segments of the medical profession and from administrators of numerous hospitals for eradication of unethical practices. As long as doctors are human, there will be transgressors among the medical profession, but no other business, trade, occupation or profession contains so many able, dedicated men and women devoted to the betterment of mankind as the medical and hospital professions.

How should the public be informed about the benefits of accreditation? There are several steps worthy of consideration. First, members of the medical profession should demand that all hospitals in which they work gain accreditation, and they should insist that their patients enter only accredited hospitals for treatment. Moreover, the profession, working through local medical societies, should inform the public of the benefits of accreditation by newspaper articles and by talks to lay groups.

Hospitals should supplement this public information program by distributing to patients factual and informative pamphlets concerning the patient's stake in accreditation. This is an era of brand names and accepted products. An intelligent public wants the best, but it cannot be expected to appreciate anything as intangible as accreditation unless it is properly informed. The accredited hospital is a blue ribbon product, and it needs to be publicized.

There have been suggestions from the medical profession and hospitals that accreditation should be made compulsory by local government health agencies which would demand accreditation by the Joint Commission as a requirement for government licensure of a hospital. There is some doubt that such action would be entirely wise. Accreditation has been voluntary from its inception 36 years ago and every effort has been made to avoid even the suggestion of compulsion. The program has been entirely free from discrimination against race, creed and color, and, most important of all, political and other undesirable influences have never affected the decisions of the accrediting agencies.

It is not certain that such integrity could be maintained in any liaison with government. The co-operation among the parent organizations comprising the Joint Commission has been most heartening, and the program of accreditation is being strengthened and expanded. Public demand for accreditation will accomplish the objectives of government action without sacrificing the advantages of integrity and freedom from undesirable influence now enjoyed by the Joint Commission.

Privileges bring responsibilities, and the patient bears certain moral obligations in return for the benefits he receives from accreditation. It is to be expected that he will patronize those hospitals whose physicians and administration have sacrificed time, money and effort to obtain accreditation for his benefit. Moreover, the patient must recognize that the standards of accreditation proscribe surgery and medical treatment in the absence of specific medical indications. The patient's request alone is not a valid indication for specific surgical procedures or medical treatment, and the patient must not demand special consideration in violation of accepted principles of accreditation.

If the medical profession and hospitals believe that their prime concern is the welfare and safety of the public, they are irrevocably committed to the program of accreditation, and it should be their combined objective to educate the public about the benefits of accreditation. Anything less is a betrayal of our medical ideals.

THE LEISURE CORNER

LOOKING AT MODERN ART

Perhaps among no other group of professional persons an interest in painting and sculpture been more extens cultivated than among American physicians. Thousands of p cians have translated their interest into action by joining ranks of Sunday painters, starting modest collections of pain and sculpture, or avidly attending art exhibitions. While exact relationship between art and medicine has never defined to the complete satisfaction of the two types of p tioners, both disciplines have much in common. Capable p cians and artists have a quick eye, possess manual dext entertain a sympathetic interest in their environment, and e a comprehensive understanding of their fellow human bein

In order to understand contemporary art or, for that m the art of any historical period, it is necessary to view a terms of the society, culture, and era that produced it. U science, there are no absolute standards by which art ca measured, there are no authorities whose judgment can be to be omniscient, and there is no single, correct way to lo a painting or a piece of sculpture. Although the role of the has been variously interpreted at different times, Sieg Giedion offers this succinct observation: "The artist," he as "in fact, functions a great deal like an inventor or a scie discoverer: all three seek new relations between man an world. In the artist's case these relations are emotional in of practical or cognitive. The creative artist does not wa copy his surroundings, on the one hand, or to make us see through his eyes, on the other. He is a specialist who sho in his work as if in a mirror something we have not realize ourselves: the state of our souls. He finds the outer syn for the feelings which really possess us but which for u only chaotic and—therefore—disquieting, obsessive stin This is why we still need artists, however difficult it may b them to hold their place in the modern world."

While many persons are more accustomed to reading a art in magazines and newspapers, the opportunity to look picture, "in the flesh" as it were, would not only develop sensitive perception but also increase enjoyment. This me has provided many contemporary artists with a new vocab to explain, portray, and interpret the vast numbers of and auditory stimuli that bombard 20th century life. Mo art is more concerned with expression than with represent with creation rather than with imitation. If anything, mo art is characterized by various styles and various technique experiment, by daring, and by lack of conventionality.

Cubism provides one of the most significant developmen modern art. In order to appreciate a cubist painting, a spec should stop being a passive onlooker; instead, he should ma serious attempt to identify himself with the artist and fo the development of the painting step by step. For examp cubist painter will start with a known object as his poin departure and attempt to show all sides of it at one time, th front, back, sides, inside, top, and bottom. In short, what he to do is depict the entire object visually as a single experie

As can be surmised, cubism permits an artist considerable dom. Despite the fact that the artist uses a known object as basis for his work, he will take many liberties while pain combining aspects that ordinarily escape the spectator's eye. intent of a cubist painting is neither psychological nor liter in essence, it provides a new method and a new visual langu to extend the possibilities of experience. Since cubist painters more interested in transforming an object than in transform a subject, they manipulate their material at will.

Futurism began to interest a number of artists several y after the advent of cubism. This aspect of modern art is c cerned with motion. In both cubism and futurism the dissec of form is combined with a constant reassembling process.

This article is based in part on material drawn from a book wri by Katharine Kuh: "Looking At Modern Art," Art Institute of Chic 1955.

jects are disintegrated only to be put together in new combinations, so that complete form and motion are recorded in single visual experiences. A notable difference between cubism and futurism lies in the fact that cubist painters combine all sides of an object simultaneously, while futurist painters attempt to express complete motion at one time. The goal of a futurist painter is not so much to suggest motion—this has been done in the past—but actually to depict and capture motion on canvas or paper. Futurist painters have tried to accomplish this by a series of overlapping forms that illustrate the path of an object as it moves through space. They did not merely want to show a man running—what they wanted to do was to show the running of a man, in fact, the continuous running of a man at a given time. Marcel Duchamp's famous painting "Nude Descending a Staircase," was *in one sense a motion-picture technique* that anticipated the results of the dissection of motion by the stroboscopic camera.

As employed today by the *cognoscenti* of the modern art world, the term expressionism has more than one meaning, although it chiefly implies emotional expression. In general, an expressionist painter will sacrifice a naturalistic appearance for a *completely personal interpretation, producing an emotional* feeling of a scene rather than its visual counterpart. This is accomplished by exaggerating color, form, line, and space.

Psychoanalysis has provided some artists with source material for their work. A case in point is surrealism, which is concerned mainly with irrational dream material. In an effort to escape the difficulties and ennui inherent in much daily life, the early surrealist *painters claimed that dreams supplied the only reality* and it was through dreams that emotions could be released; hence, the name of this particular art movement—sur (super) realism. In surrealism, barriers of time as well as moral judgments are frequently eliminated and the painter arranges a combination of unconscious experiences on a single canvas where the past, the present, and intervening psychological states are superimposed.

The art movement known as Dadaism had a basic philosophy that differed from that of surrealism, which it antedated. Dadaism evolved during the First World War as a protest against war, and it attempted to escape disillusionment by complete negation. The eminent critic, Lewis Mumford, once called Dadaism "an irreverent commentary on the inflated platitudes of politicians," and Clifton Fadiman facetiously referred to the late Gertrude Stein as "the Mamma of Dadaism." On the other hand, modern technology and science have given artists a wealth of new materials and new approaches for using old materials. As a result, contemporary artists have had greater opportunities for experimentation. The mobile, a new kind of sculpture, provides a good example. The development of the mobile can be traced to contemporary interest in motion and the diversified use of materials. Heretofore, most sculpture has been static, occasionally suggesting movement but not participating in movement itself. The mobile, which is based on the idea that its various parts are flexible, is designed for motion. As it moves, the mobile presents numerous relationships to the spectator. Generally, an observer must move around three-dimensional sculpture in order to see it properly. Since mobiles presuppose that both the sculpture and the spectator *move, many changing aspects can be* seen at one time.

In recent years, a new school of painting that can loosely be described as abstract expressionism has been gaining adherents in the United States and Europe. As in the case of surrealism, abstract expressionism is geared more to the needs of the artist than to the immediate understanding of the general public. Abstract paintings are frequently filled with allover patterns devoid of a beginning or an end. Form is relatively unimportant —mood is what counts. There is apparently no one central idea, no preliminary sketch in a painting classified as abstract expressionism. An abstract composition will provide an artist with an immediate experience in which he depicts what he feels at the moment, and this culminates in completely abstract designs.

For many people contemporary art and sculpture is either a joy or a puzzle. Nonetheless, its influence has been felt in every nook and cranny of American life. If there is any doubt, one need only look at modern furniture, architecture, transportation, and household appliances, to name an important few. Whatever the attitude of artists and spectators may be to certain aspects of modern art, it would be well to keep in mind the point of view that has been expressed by Katharine Kuh. "In our own way of life," she declares, "each man is allowed to express himself independently; each artist can work as he wishes. So also the spectator, sharing this same freedom, is entitled to form his own judgments. No government imposes its will, no one school of art can dictate policy in a field so open to competition. . . . One need only observe the sterility of art under dictatorships like Nazi Germany or Soviet Russia to realize how official directives and censorship obstruct creative expression and enforce uniformity."

MEDICAL FILM REVIEWS

The Magic Touch: 16 mm., color, sound, showing time 9 minutes. Educational Collaborator: Edward G. Johns, Ed.D., Department of Health Education, University of California at Los Angeles. Produced by and procurable on purchase ($90) from Avis Films, Inc., 932 N. LaBrea, Hollywood 38, Calif.

The purpose of this film is to counteract apprehensions in regard to immunization by showing (1) how immunization protects the body against disease and (2) how insignificant the mild discomfort of being immunized is in comparison to the benefits derived. Sally, Jill, and Jerry are members of an elementary school class that is visited by the school nurse preparatory to immunization. The nurse's talk covers the two points described above. Because they understand and appreciate the nurse's message, the children are not apprehensive when they undergo actual immunization, and as a result of their proper attitude they find that the "magic touch" is indeed a slight discomfort. At home, the children play "doctor and nurse," with Sally's doll as patient, to recapitulate and emphasize the lessons they have learned from the school nurse and from their own experiences in being immunized. This is a well-acted film on the need for immunization. Technically, the method of flaming the needle and of using the same needle for successive injections is questionable. The possibility of the spread of infectious hepatitis suggests the use of individual autoclaved needles. In addition, the possibility of the transformation or precipitation of the proteins in the toxoid by heating the small amount left in the needle could produce untoward sensitizations. The use of the public health nurse for classroom teaching varies from community to community. This film is suitable for showing in the classroom and to parent-teacher groups.

A Matter of Time: (Cleared for Television): 16 mm., color, sound, showing time 14 minutes. Produced in 1954 by *Unifilms for the Institute* of Life Insurance, under the technical guidance of Dr. Francis R. Dieuaide, Director of the Life Insurance Medical Research Fund. Procurable on loan from Association Films, Ridgefield, N. J., and regional libraries of Association Films.

This film shows the laboratories, hospitals, and medical schools where scientists and researchers are seeking a cure for heart disease. Such research developments as the "jiggle-bed," oscillograph, and the mechanical heart are featured, with an explanation of the causes and effects of various forms of heart disease. Animation and scale models are used to illustrate the four types of heart disease: arteriosclerosis, hypertension, rheumatic fever, and congenital malformations. The film also suggests aids to the average person in avoiding heart disease and attaining a longer, healthier life. There are innumerable parts that are *not understandable to laymen, particularly the photo*micrographs of arterial sections, many unexplained sequences of laboratory devices, and charts. Apparently, the film is designed to impress people with the need to protect their hearts, but this objective has not been reached. The very positive statement, given in at least two instances, that heart diseases will be conquered in time is not particularly reassuring when one knows the relative impossibility of that in the modern classification of disease and the tabulation of causes of death. With a good discussion leader, this film would be suitable for service and hospital groups, heart association workers, and for health education at the college level.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Adams-Stokes Syndrome: The Treatment of Ventricular Asystole, Ventricular Tachycardia and Ventricular Fibrillation Associated with Complete Heart Block. S. R. Robbin, S. Goldfein, M. J. Schwartz and S. Dack. Am. J. Med. **18**:577-590 (April) 1955 [New York].

Four cases of heart block with Stokes-Adams syndrome are described in two men and two women between the ages of 48 and 77 years to illustrate the two different mechanisms that may precipitate the attacks, namely, ventricular asystole and ventricular tachycardia or fibrillation. The approach to management should be individualized, with treatment adjusted according to the underlying mechanism. Epinephrine is the drug of choice for the treatment of ventricular asystole and should be given in a sufficient amount with the aid of electrocardiographic control. It is contraindicated when ventricular tachycardia or fibrillation is the mechanism for the attacks. Procaine amide (Pronestyl) and quinidine have been found to be ineffective and even harmful in the treatment of ventricular tachycardia or fibrillation in the presence of heart block, because of their depressant effect on the junctional tissues. Isopropyl arterenol (Isuprel) was given to two of the authors' patients. In one of them the causal mechanism was ventricular asystole and in the other, ventricular fibrillation. Isuprel stimulates the higher ventricular centers and, therefore, does not predispose to ventricular fibrillation. It appears to be the drug of choice when the basic mechanism for the Stokes-Adams syndrome is ventricular tachycardia or fibrillation and when ventricular asystole alternates with tachycardia or fibrillation in the same patient. Isuprel is given in doses of 10 to 15 mg. sublingually, four or five times daily for the prevention of attacks. For treatment during attacks the frequency of the administration and the dose must be increased, but this varies in different patients and even in the same patient depending on the patient's tolerance and requirement. One of the authors' patients required 15 mg. of the drug every hour for the first 24 hours to prevent recurrence of the attacks, and in the other patient the optimal dose was 7.5 mg. four times daily. Three of the authors' patients had atrial flutter associated with the atrioventricular block, a rare combination.

The Relation of Subcutaneous Focal Sensitivity to Referred Pain of Cardiac Origin. M. A. Kennard and F. P. Haugen. Anesthesiology **16**:297-311 (May) 1955 [Philadelphia].

The referred pain that usually occurs in the left shoulder and upper arm, but may also occur about the right shoulder and the neck, is recognized as a frequent accompaniment of the precordial distress that results from myocardial insufficiency. In some patients with chronic coronary insufficiency the referred pain becomes the outstanding symptom and the arm and shoulder become rigid and atrophic in consequence of the pain. Marked relief and return of peripheral function may follow procaine injection of trigger areas about the arm and shoulder. During the treatment of patients with cardiac disorders, the authors observed that the abnormally sensitive trigger areas lay in we defined locations and that the pain from these trigger sp always radiated in the same directions. In order to obtain mo information on the trigger sites they searched for them in patients with cardiac disorders, 35 patients with thoracic d orders not related to the heart, and 46 patients with nonthora disorders. Firm but gentle pressure of the hand and fingers w applied over the entire chest, back, and shoulders. If a pers without signs of cardiac or other disorder presses firmly on c tain areas of his chest or back he may find some spots that more sensitive than others. In these same regions, cardiac tients may be much more sensitive and the pain may be spre over much larger areas so that light pressure alone may ca them to flinch. On firm pressure the pain is discrete, stabbi and "hot." The pain remains for several minutes after the pr sure is removed in the controls. In sensitive cardiac patients is many times magnified. Both the controls and cardiac patie were completely unaware of these sensitive spots until they we examined. Furthermore, the sensitivity to pressure was not lated to their spontaneous chest pain except in a few cases. the two spots that were most frequently sensitive, one lies the chest in the midclavicular line about 1 in. below the clavic and the other on the back of the shoulder at the upper bor of the trapezius. Next most frequent were those at the anter axillary border and those in the second and third intercos spaces on the chest. Pressure over the flat surface of the scap also frequently produced pain. A severe degree of sensitiv was observed only in patients with cardiac disorders. Furth more, in these cardiac patients the sensitivity was either entir or predominantly on the left side. There seemed to be a relati ship between the degree of spontaneous pain and degree of se tivity. Those cardiac patients who had severe coronary pain d ing their illness demonstrated the greatest tenderness to pressu In many cardiac patients the tenderness became less as the sp taneous pain diminished during convalescence, but there was significant correlation between the severity of the trigger p and the subsequent course of the cardiac disorder. It is s gested that (1) the trigger areas are the result of focal inflamm tory changes based on reflex vasomotor processes and that fact accounts for their persistence when the visceral source of pain is no longer present; (2) the sensitive areas lie in cl relationship to the larger and more superficial nerves; and the syndrome of referred cardiac pain can best be explained the use of pathways of referral from the visceral autonom source of excitation to other autonomic afferent fibers from shoulder and neck, which enter the same ganglia and the sa cord segments as do the cardiac afferent fibers. Such a conce of referral from autonomic-to-autonomic, rather than autonom to-somatic, would explain many other types of severe deep-lyi pain that do not follow the usual segmental somatic patterns.

Quinoline Therapy in Asthma: Report of 500 Cases. C. Geschickter. South. M. J. 48:497-509 (May) 1955 [Birmingha Ala.].

A series of 500 patients with bronchial asthma was treat with a new quinoline derivative—N, N-diethyl-cis-Δ^4-tetrah drophthalamic acid (Phthalamaquin). It has both bronchodilat and antihistaminic properties, as well as the unusual advanta of localizing in the respiratory tissues. It is administered eithe orally or intramuscularly in 50 mg. doses in the form of its o ganic salt, and intravenously in the form of its ascorbic acid sa in doses of 200 to 500 mg. In long-continued clinical use th safe oral dose is 3 mg. daily per kilogram of body weigh Patients have been treated over periods from 6 to 48 months The results were good to excellent in 80% of the patients, fa in 10%, and poor in the remaining 10%. All of the patients ha previously failed to respond to other treatments.

The place of publication of the periodicals appears in brackets preceding each abstract.

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verse Effects of Therapy in Allergic Disorders. A. Sterling. 11:93-94 (May) 1955 [Kansas City, Mo.].

Many allergic patients who would benefit from desensitization d thus avoid future bronchial asthma and invalidism are lost the medical profession because of overdosing and subsequent nstitutional reactions. Desensitization with potent material ould be undertaken cautiously in highly sensitive persons, with quent minute doses in dilutions as weak as 1:100,000 to 200,000 intradermally. It is best to keep new patients in the ice for 15 to 20 minutes after injections to make sure shock actions do not develop in them. The therapeutic need for inephrine and related compounds varies widely in different rsons. Patients may go through a temporary stage in which y are resistant to the effects of epinephrine, and to continue give the drug in larger and larger doses during this stage can ove extremely harmful to the patient. The antihistamines are luable, especially in the treatment of hay fever because of their ying effect on the respiratory mucosa. In patients with hay er, asthma, and bronchitis, however, interference with expec- ation may cause discomfort. The sedative effect of these drugs st be kept in mind too. The prolonged use of rectal suppos- ries may cause pruritus or proctitis. Corticotropin, cortisone, d hydrocortisone block the allergic process but do not aid in gnosing the cause of the difficulty. Electrolyte metabolism st be checked constantly during therapy with these agents. tassium iodide liquefies bronchial secretion and may relieve ficult expectoration, but it induces marked rhinitis, which may turn aggravate the cough syndrome.

e Low Sodium Syndromes. E. G. Margolin and J. P. Merrill. 11:58-69 (May) 1955 [Kansas City, Mo.].

A low sodium syndrome is produced by one of three mecha- ms: dilution of sodium, i. e., the retention of water over and ove the retention of sodium; depletion of sodium, i. e., an tual decrease in the amount of sodium present in the body, in presence of essentially normal amounts of body water; and listribution of sodium or water in the body (phenomenon of aptation), i. e., the loss of sodium from the extracellular, asurable space or its dilution by water leaving the intracellular ace. Differentiation of these three types of hypotonic state is sed on the following clinical and laboratory data: the patient's rmal weight and recent changes in weight; the presence or sence of edema and dehydration; the recent intake and output fluid; consumption of food; existence of vomiting, diarrhea, d profuse sweating; the presence of visceral disease such as rdiac failure, hepatic insufficiency, renal impairment, or ter- inal cancer; and determinations of serum protein, hemoglobin vel or hematocrit, carbon dioxide combining power, chloride, tassium, serum nonprotein nitrogen, and sodium in the urine d, sometimes, in other body fluids. The best treatment for a tient with hyponatremia due to dilution is restriction of water, companied by general supportive measures. Hyponatremia due sodium depletion is often the direct result of various thera- utic maneuvers. Sodium replacement therapy is usually indi- ted, but it must be accompanied by careful checking of the neral electrolyte balance, particularly against potassium deple- on. Hyponatremia due to redistribution should not be treated administration of excess salt. It is seen postoperatively or the result of chronic stress and is an expression of underlying sease. It may be clinically asymptomatic. Specific instances of w sodium syndromes occur in congestive heart failure, cir- osis with ascites, chronic nephritis, adrenal cortical hypofunc- on (Addison's disease), acute renal insufficiency, the nephrotic ndrome, and in certain cases of central nervous system disease r severe tuberculosis and other cachectic states.

uthyroid Patients with Early Eye Signs of Graves' Disease: heir Response to L-Triiodothyronine and Thyrotropin. S. C. Verner. Am. J. Med. 18:608-612 (April) 1955 [New York].

In a series of 10 patients between the ages of 24 and 63 years with early ocular signs of toxic diffuse goiter consisting of widen- ng of the fissures and a limited degree of proptosis, 7 were euthyroid by every criterion available including basal metabolic rate, fasting cholesterol levels, and chemical serum precipitable iodine values; the other three were euthyroid by all criteria except the serum precipitable iodine, the levels of which were high. After an initial determination of radioactive iodine (I^{131}) uptake at 24 hours by the thyroid made with a 15 μc test dose in the 10 patients, all were given L-triiodothyronine by mouth in doses ranging from 0.07 to 1 mg. daily, for eight days. On the morning of the eighth day the radioactivity in the thyroid was measured, a second 15 μc dose of I^{131} was administered and the 24 hour uptake again determined. The absence of decrease in uptake by the thyroid in these euthyroid patients with ocular signs of toxic diffuse goiter was striking in contrast to the marked decrease in uptake shown by 30 euthyroid control persons. Thyrotropin was administered intramuscularly to eight patients in doses of 10 units (30 mg.) daily for three days. A diagnostic dose of 15 μc of I^{131} was given orally on the third day, and the uptake was determined 24 hours later. Although there was a slight increase in average uptake of I^{131} by the thyroid, the amount was negligible in five of the eight patients tested. A brisk increase in the serum precipitable iodine level followed thyrotropin administration in all patients. The author's patients responded to triiodothyronine and thyrotropin like patients with overt toxic diffuse goiter. It is concluded that these patients did, in fact, have toxic diffuse goiter. It is demonstrated that the normal pituitary-thyroid relation is disrupted in these patients and that euthyroidism can be maintained despite this disruption. The disruption of the normal relations and the abnormal responses of these patients to thyrotropin may be considered as further evidence that toxic diffuse goiter is not caused by hyperpituitarism but is mediated by mechanisms apart from that gland. Triiodothyronine and the 24 hour uptake method provide a new and highly reliable test of thyroid function.

Significance of Lowering of Vitamin E Concentration in Serum of Patients with Liver Diseases. A. Bäumer and R. Beckmann. Klin. Wchnschr. 33:431-434 (May 1) 1955 (In German) [Berlin, Germany].

The concentration of vitamin E in the serum was determined in 54 patients, 15 of whom had epidemic hepatitis, 8 cirrhosis of the liver, 5 obstructive jaundice, 11 so-called intermittent juvenile jaundice of Meulengracht type, one subacute atrophy of the liver, 2 primary carcinoma of the liver, and 8 carcinoma of various organs not associated with icterus. Results showed that diseases of the liver and jaundice of Meulengracht type are almost always associated with a disturbance of vitamin E metabolism. As a rule this disturbance is manifested by a lowering of the concentration of vitamin E in the serum. A marked increase in the concentration of vitamin E in the serum of one of the patients with carcinoma of the liver not associated with jaundice could not be explained. To study the influence of vitamin E on the function of the adrenal cortex, three patients with cirrhosis of the liver, two with hepatitis, one with cholangitis, and four with jaundice of Meulengracht type were treated with alpha-tocopherol. Concentration of vitamin E in the serum and total-neutral-C-17-ketosteroid excretion in the urine were determined in these patients before and after treatment with alpha-tocopherol. An increase in the total-neutral-C-17-ketosteroid excretion in the urine was observed in all 10 patients. It was associated with increase in concentration of alpha-tocopherol in the serum of these patients and with definite improvement of their subjective general complaints. Vitamin E did not exert any influence on the changes of the metabolism of the biliary pigment and the serum protein structure in the patients with diseases of the liver, and it did not have any effect on the hyperbilirubinemia of the patients with icterus of Meulengracht type.

Clinical Evaluation Studies in Lepromatous Leprosy: First Series: Diasone (Diamidin), 4-4'-Diaminodiphenyl Sulfone, Dihydrostreptomycin. J. A. Doull. Internat. J. Leprosy 22:377-402 (Oct.-Dec.) 1954 [New Orleans].

A series of patients with lepromatous leprosy were selected and assigned in equal numbers to six therapy groups by a method that gave priority to comparability in sex and age and took into account other characteristics relevant to prognosis. These groups were subjected to impartial appraisal after 32 to 48 weeks. The drugs and combinations used were: (1) diasone (diamidin), (2) 4-4′-diaminodiphenyl sulfone (DDS), (3) dihydrostreptomycin sulfate, (4) diasone plus dihydrostreptomycin sulfate, (5) dihydrostreptomycin sulfate plus sodium *p*-aminosalicylate and (6) a placebo or sodium *p*-aminosalicylate alone. Therapy and examinations were completed in 852 patients. Diasone, DDS, and dihydrostreptomycin proved of definite and about equal value in the treatment of lepromatous leprosy. A combination of dihydrostreptomycin and diasone showed no advantage over either given singly, and addition of sodium *p*-aminosalicylate to dihydrostreptomycin did not augment its effectiveness. The proportion of patients who, on clinical grounds, were considered to be moderately or markedly improved was 20% after 32 weeks, and 25 to 30% after 48 weeks. Very few of the patients who were given placebos improved, but about 17% of the controls given sodium *p*-aminosalicylate showed improvement, which suggests that this drug may have some beneficial effect.

Type E Botulism Due to Salmon Eggs. C. E. Dolman, G. E. Darby and R. F. Lane. Canad. J. Pub. Health 46:135-141 (April) 1955 [Toronto, Canada].

In November, 1954, three young Indian women (sisters) in British Columbia fell ill with symptoms suggesting botulism. The incriminated foodstuff was salmon egg cheese, made by a tribal method that involves washing and smoking the mass of eggs, which are then allowed to mature in boxes or tins for two to four weeks before consumption. The sisters ate the salmon egg cheese raw, and one of them died. A strain of Clostridium botulinum type E was isolated from her stomach contents, and also from samples of the salmon eggs consumed. Its toxigenic capacity in laboratory mediums resembled that of other type E strains, cultures attaining a potency of 1,000 to 3,000 mouse minimum lethal dose per milliliter. The circumstances of this outbreak of botulism permitted the lethal dose of type E toxin for man to be fairly accurately determined at around 500,000 mouse minimum lethal dose. In the period 1944 to 1954 there have been four outbreaks of type E botulism in British Columbia, all due to uncooked or insufficiently cooked fish or fish products. Of the nine persons affected, six died.

Recognition of Abnormal Hemoglobin Syndromes. R. H. Alway. Journal-Lancet 75:215-222 (May) 1955 [Minneapolis].

Filter-paper electrophoresis provides a relatively simple and inexpensive means of determining the electrophoretic mobilities of hemoglobins A (adult), S (sickling), C, and F (Fetal). Hemoglobins D and F may be recognized by further studies. Although sickling is most easily recognized in patients with sickle-cell anemia and sickle-cell thalassemic disease, it is also found in those with sickle trait, sickle-cell hemoglobin C disease, and sickle-cell hemoglobin D disease. Leptocytosis suggests the presence of hemoglobin C. It is most marked in homozygous hemoglobin C disease but is also seen to a lesser extent in sickle-cell hemoglobin C disease, sickle-cell anemia, hemoglobin C trait, and in thalassemia major and minor. Erythrocyte hypochromia and microcytosis may be noted in the thalassemic conditions. Splenomegaly is most marked in thalassemia major. It is progressive in sickle-cell thalassemic disease and sickle-cell hemoglobin C disease but usually regresses before adolescence in sickle-cell anemia. It is less marked in homozygous hemoglobin C disease and thalassemia minor. Arthralgia is noted not only in the three most common forms of sickle-cell disease, i. e., sickle-cell anemia, sickle-cell hemoglobin C disease, and sickle-cell thalassemic disease, but also in persons homozygous for hemoglobin C. Hematuria is of possible significance in sickle-cell hemoglobin C disease.

Treatment of Acute Leukemia with Fluorohydrocortisone. J. M. Hill and L. Vincent. Sang 26:269-281 (No. 3) 1955 (In French) [Paris, France].

Seventeen patients with acute leukemia of various types were treated with 9-α fluorohydrocortisone acetate. Daily massive doses theoretically equivalent to 5 or 10 gm. of hydrocortisone were used without serious side-effects. Seven complete remissions were obtained, three partial remissions, and four fai in the 14 patients who received a total of more than 250 of the drug. Three other patients were admitted to hospita the terminal stages of their disease. The action of the drug, w successful, was unusually prompt. One of the complete re sions occurred in a patient with plasmocytic leukemia. Of 10 patients with remissions, 5 had never been treated a received no other antileukemic chemotherapy during flu hydrocortisone therapy. The drug appears capable of produ remissions in patients in whom other agents, including cor tropin administered intravenously, are no longer useful. remissions obtained do not last any longer than those from c types of hormone therapy. Marrow examinations in this s showed an increase in the fragility and destruction of the kemic cells and some mitotic anomalies. It is not known wh these phenomena represent a quantitative or qualitative d ence of fluorohydrocortisone relative to the action of corti and hydrocortisone. In almost every patient there was de stimulation of erythropoiesis with frequent passage of nucle blood cells into the peripheral blood varying in general bet 5 and 15% white elements. The platelets were not so const affected.

Nonsuppurative Intrathoracic Complications of Ameb R. Coirault, H. Coudreau and J. Girard. Semaine hôp. Pari 1591-1602 (May 6) 1955 (In French) [Paris, France].

Difficult problems often arise in connection with the d ential diagnosis of the intrathoracic manifestations of ameb which may consist not only of a primary amebic abscess i lung, without any concomitant involvement of the liver, an abscess localized at the base of the right lung, represe an extension into the thorax of an abscess in the liver, but of various suppurative and nonsuppurative pleuropulm complications. Patients with nonsuppurative intrathoracic festations present three major syndromes: (1) diffuse pleur monary involvement of the base of the right lung; (2) p chymatous foci, either pneumonic or in the form of dissemi infiltrates; and (3) serofibrinous pleural effusions. Amebic titis was invariably found in the authors' patients, and its tion, though often difficult, is an essential part of the diag because it proves the amebic origin of the pleuropulmonary drome. Many of the signs and symptoms presented by the pa are subject to misinterpretation. They are often attributed t mary pulmonary disease and as a result the underlying hepat overlooked. Failure to identify and treat the hepatitis, how may be followed by abscess formation with the danger of s suppurative complications in the thorax unless the absces be drained either medically or surgically. A trial treatment emetine, which is remarkably effective in amebic conditions, establish the diagnosis in doubtful cases. Patients with no purative intrathoracic complications of amebic origin us recover rapidly when treated with emetine. The fever subs the sedimentation rate returns to normal, and the general c tion improves. The clearing of the radiological findings, how may take longer than the resolution of the hepatitis. Atte should always be given to persistence of the radiological in evaluating a cure, because the relief of the hepatitis ma only temporary, and its reactivation may result in further i thoracic complications.

Suppurative Intrathoracic Manifestations of Amebiasis. R. ault, H. Coudreau and J. Girard. Semaine hôp. Paris 31:1 1617 (May 6) 1955 (In French) [Paris, France].

The suppurative intrathoracic manifestations of amebiasis into two groups: (1) syndromes of pulmonary suppuration purulent vomica and (2) various forms of empyema. Reco with complete return to health of the pulmonary parench takes place in almost all patients, but more or less signifi pleural sequelae are left. The suppurative manifestations of a biasis are seldom primary, almost always appearing as compl tions of amebic hepatitis, which may or may not be evid The elements that establish amebiasis as the cause of the co tion are the presence of hepatitis; the macroscopic character the pus and its abundance and sterility (except in cases of seco y infection); and the spectacular improvement rapidly obtained treatment with emetine alone. The purulent matter found in e thorax in about 80% of these patients comes from a liver scess that has ruptured and perforated the diaphragm. Only e difficulties encountered in obtaining an accurate diagnosis such an abscess can excuse the occurrence of this complicaon. Failure to diagnose and treat the hepatitis, either because e patient did not seek advice promptly or because it was asked by pleuritic or pneumonic symptoms, may result in the rmation of a hepatobronchial fistula and massive vomiting of s, differing in character according to the age of the abscess. is phase of the disorder, which rarely lasts more than three ys, is followed by regression of the hepatitis and an immediate mission of the clinical signs. Treatment with emetine will comete the cure. Most amebic abscesses of the lung can be traced pus from a ruptured liver abscess, but in some patients intralmonary suppuration is apparently caused by amebas that ve been transported to the lungs either by the blood or the mph. Empyema, which is the most serious intrathoracic manistation of amebiasis, may appear abruptly, causing severe pain d shock in a patient whose general condition has been imired by a latent hepatic abscess. Treatment for shock and ompt evacuation of the purulent matter by puncture aspiration, mbined with antibiotics and antiamebic medications, will usuly cure both the hepatic abscess and the empyema, although covery may be delayed by complications such as bronchopleural tulas and pleurisy. Empyema that is insidious in its onset may pear as a severe purulent pleurisy, or it may become encysted the base of the right lung. Amebic empyema in all its forms ually yields to medical treatment, but it may be fatal, and even hen it can be cured it has important sequelae, because the resultg retraction of the thorax and virtual immobilization of the diaragm reduce the functional capacity of the lung.

igestive Ailments of Older Patients. A. M. Snell. Minnesota ed. 38:309-314 and 330 (May) 1955 [St. Paul].

Many of the gastrointestinal complaints in the aged are caused curable or correctable lesions. Acute or reactivated peptic cer is relatively common in patients over 60 years of age, and th the incidence and gravity of hemorrhage appear to increase ith age. Obstruction is noted in 10 to 15% of old patients with ptic ulcer. Gallstones are probably the commonest single use of severe abdominal pain in patients over 65 years of age d neither the location nor the exact character of the pain is much diagnostic value. As a rule the old patient with gallones tolerates operation well and there are few contraindicaons. The major problem referable to the colon in old patients constipation. The patient should be persuaded that the intesne need not be emptied every day and that no physical harm ill result from an overdue stool. Diarrhea in old people is oublesome; occasionally it is associated with achlorhydria d probably also with deficient intestinal absorptive capacity. his may be relieved in part by parenteral administration of ver extract and the use of vitamin concentrates. Although mplications of cirrhosis of the liver, chiefly hemorrhages from arices and episodes of hepatic necrosis, are often fatal in old ersons, some of the older cirrhotic patients may survive for ears in a fair state of health. In many of the patients of adanced age, the complaints, however bizarre and atypical, are kely to have an organic background. The diagnosis of the rganic disease is often far from easy, chiefly because the usual lues that lead to diagnosis are absent or distorted. If the symptoms are of brief duration, full investigation is compulsory. If hey are a continuation of those that have plagued the patient ll his life, investigation is still essential, if only to provide the ecessary reassurance and support essential to treatment. Sympomatic treatment without full investigation is risky at best, nd temporizing on such a basis is the cause of much disability nd many fatalities in the aged. It should not be forgotten that ersons who reach the eighth decade of life are of a rather pecial pattern and not infrequently are made of better biological materials than their juniors. Their tolerance of operations may be amazingly good and their recovery from even major procedures rapid. Here is a field in which all physicians can participate in reducing mortality and morbidity rates and in making life more bearable for many persons who have passed their prime.

An Outline of the Newer Methods of Study of Atherosclerosis with Emphasis on the 80 to 100 Year Group. H. B. Eiber, A. A. Goldbloom, O. Deutschberger and others. Geriatrics **10**:213-220 (May) 1955 [Minneapolis].

Blood lipid determinations were made in 400 patients from 25 to 100 years of age. Roentgenograms of 650 patients were reviewed. An intensive survey was made of 75 patients, aged 80 to 100 years, with no previous histories of diabetes, or of coronary, metabolic, endocrine, or venereal disease. It was found that blood lipids contribute little to diagnosis and prognosis. The total lipids are low in the older group; cholesterol, phospholipids, and the phospholipid/cholesterol ratio are statistically inconclusive. A low lipoprotein atherogenic index may represent a current rate of atherogenesis or previously existing atherogenesis in the older age group. Determination of this index is not of any practical clinical value in the older group. There is furthermore no justification for electrophoretic or ultracentrifuge determinations in elderly patients with atherosclerosis, but the degree of dilatation of the aorta as well as the degree of calcification as seen in the roentgenogram is of extreme importance. Aortic arch calcification is increased in proportion to the degree of widening of the aorta arch. Lateral views of the abdominal aorta should be taken routinely. There is no electrocardiographic pattern typical of the aged person. Ballistocardiography is far from perfect, and the technical errors associated with it are greatly multiplied in old persons. Correlations of eyeground studies with other clinical findings are high. Total lipids, certain serum lipoproteins, the atherogenic index, the degree of aortic calcification, and the degree of aortic dilatation—all increase from youth until the "threshold" age of 60 to 75, after which there is a decline or reversal of trends. No definite conclusions are as yet available with regard to the changes taking place during the "threshold" age.

Duodenal Ulcer as an Occasional Etiologic Factor in Obstructive Jaundice. W. J. Snape. Ann. Int. Med. **42**:1001-1010 (May) 1955 [Lancaster, Pa.].

Despite the close anatomic relationship between the extrahepatic biliary system and the duodenum, jaundice is infrequently reported in patients with duodenal ulcer. In a period of three years, however, Snape observed six patients in whom duodenal ulcer was associated with jaundice. Reflection on the anatomy of the area adjacent to the duodenum suggests that the duodenal ulcer may cause occlusion of the common bile duct (1) by means of impingement of the ulcer or its inflammatory reaction on the biliary papilla—this is an uncommon mode of obstruction; (2) by compression of the common bile duct due to inflammation and edema of the pancreas resulting from a posterior penetrating ulcer since in 75% of the population the common duct travels behind the superior portion of the duodenum and is embedded in the pancreas; and (3) through involvement of the gastrohepatic ligament in deeply penetrating or perforating ulcers. The elevated alkaline phosphatases, the prompt response to vitamin K, the absence of urine urobilinogen, the prompt recession of jaundice with ulcer therapy, and liver biopsy all tend to confirm the presence of obstructive jaundice in these patients with duodenal ulcer. Moreover, surgical exploration confirmed this hypothesis in three of the patients. The author concludes that duodenal ulcer may cause obstructive jaundice in some patients.

Treatment of Pain in Cancer Patients. F. Fabris. Presse méd. **63**:727 (May 14) 1955 (In French) [Paris, France].

Thirty-two patients with neoplasms causing pain were treated with promethazine and chlorpromazine in addition to the analgesics they habitually received. The addition of the two drugs caused a decrease in the amount of analgesics required. Toxic reactions to promethazine and chlorpromazine were minimal. The former drug has a powerful antihistaminic and hypnagogic effect, while the latter produces psychosomatic dissociation with effects comparable to those of lobectomy. The improvement in general well-being was striking in these patients. Tumors that are ulcerated, infected, or threatened (because of irradiation) with localized inflammatory reactions benefit the most from this treatment.

Application of Homeostatic Principles to the Practice of Parenteral Fluid Therapy. N. B. Talbot, G. A. Kerrigan, J. D. Crawford and others. New England J. Med. **252:**856-862 (May 19) and 898-906 (May 26) 1955 [Boston].

In patients undergoing parenteral therapy with fluids, as in those taking food and fluids orally, the body's homeostatic systems may be expected to function satisfactorily only if necessary constituents are provided in reasonably generous and yet physiologically tolerable amounts. This report is concerned with the physiological characteristics and clinical use of dextrose in water; 0.85% sodium chloride in 5% dextrose solution; saline lactate in 5% dextrose solution (a liter of this solution is prepared by mixing 30 ml. of molar sodium lactate, 750 ml of 5% sodium chloride in dextrose, and 220 ml. of 5% dextrose in water); and a potassium-containing multiple electrolyte solution in 5% dextrose. Successful use of the suggested guides to therapy depends on careful appraisal of the status of the particular therapeutic needs of each patient. To permit the application of therapeutic considerations to patients varying in size from the premature infant to the adult, most of the values are expressed in terms of square meter of body surface per unit of time. The approximate surface area of patients of various weights may be estimated with the aid of a table, which lists 0.15 square meters as the surface area equivalent of an infant weighing 4.4 lb. (2,000 gm.) and 2.05 square meters as the surface area equivalent of a person weighing 220 lb. (100 kg.). It is concluded that the application of homeostatic principles should make it possible both to improve and to simplify the practice of parenteal fluid therapy.

Interrelationship of Acute Alkalosis and Potassium Metabolism: A Clinical Study. C. R. Kleeman, M. E. Rubini, E. Lamdin and others. Metabolism 4:238-249 (May) 1955 [New York].

A 35-year-old woman who ingested 200 cc. of an antifreeze compound containing 80% methyl alcohol, with suicidal intent, was given intravenously 1,600 mEq. (about 27 mEq. per kilogram of body weight) of hypertonic sodium bicarbonate (2,700 cc. of a 5% solution) within three hours. Her severe acidosis on admission to the hospital was rapidly converted in a marked metabolic alkalosis associated with the risk of overtreatment but justified because of the grave prognosis of untreated methanol intoxication. Her acute metabolic alkalosis was associated with potassium depletion that potentiated the original metabolic alkalosis. At the height of the potassium depletion her urine became acid despite severe extracellular alkalosis. She vomited four times in the 10th to 20th hours of hospitalization but felt well thereafter. Fluid diet supplemented with parenterally given solutions containing 5% dextrose and potassium was given on the second hospital day, after which a full hospital diet was tolerated. Coincident with potassium repletion there was a further increase in the patient's urinary excretion of ammonia and titratable acid. This sequence of events is consistent with the view that alkalosis secondary to potassium depletion is associated with an intracellular acidosis and that the "paradoxical" aciduria potentiates, but is not the cause of, hypokalemic alkalosis. The continued excretion of ammonia in an alkaline urine associated with extracellular alkalosis emphasizes that factors other than the pH of urine and/or extracellular fluids are important stimuli for ammonia production. The patient was discharged asymptomatic from the hospital on the fifth day.

Safer Pneumoperitoneum Refills. J. B. Devine and E. Dunner. Dis. Chest **27:**553-557 (May) 1955 [Chicago].

The authors show that the physician inducing a pneumoperitoneum should pay attention to the phase of respiration during which the needle is introduced into the abdominal cavity. The height of the abdominal air space in a patient with artificially induced pneumoperitoneum is increased on deep inspir tion as compared with expiration. It is therefore concluded tha for those patients receiving pneumoperitoneum refills in who an appreciable air space is not present, the insertion of th needle at the end of a deep inspiration is safer and reduces th danger of injuring the abdominal viscera.

SURGERY

A Maneuver for Extracting Clots from the Atrium at the Tim of Mitral Commissurotomy: With Reports of Four Consecuti Cases. *W. L. Jamison,* K. V. S. Rao and C. P. Bailey. J. Thorac *Surg. 29:541-551* (May) *1955* [St. Louis].

The usual technique of performing *commissurotomy* is enter the left atrium with the right index finger through incised area in the left auricular appendage *that* has been pre ously enclosed by a purse-string suture. Commissurotomy m be performed either with the guillotine knife or merely by digi pressure. One of the most dreaded complications is that of fin ing a ball thrombus *in* the auricle attached by a *thin* pedicle a *waving freely in the* blood stream. These clots may be 3 to 4 c *in diameter. During* any *manipulation* of the left auricular a pendage, *the left* common carotid artery and the right innomin *artery are clamped. While this technique* has reduced the haza from clots as far as emboli to the brain at the time of operati *are concerned, the* postoperative *threat is still* present *if* the c *is not removed.* The authors describe a maneuver that one *them* (W. L. J.) *used to remove clots successfully* in four co secutive cases during the past six months. This maneuver co prises three steps: (1) compressing the clot between the gloved index finger and auricle; (2) extracting the clot by fin *traction and grasping with a Kelly clamp;* and (3) getting of any loose particles by allowing the unclamped auricle to ble freely during the time between pronation and supination of hand. In the first of the four patients the auricular append was so small that the surgeon was able to insert only the fi finger. Jamison found this a safe and efficient method of deali with a small, thrombosed appendage. If the fifth finger does have sufficient strength to open the valve, a guillotine knife then be used. In the second patient, who had Raynaud's dise in addition to rheumatic fever, an attempt was made to wa out any clots in the atrium by merely opening the Satinsky clan This proved ineffectual in that a large clot was subsequen palpated *in the* left atrium. This *shows the need for* an additio technique to deal with these clots rather than merely bleedi the appendage. In case 3, flushing the appendage by opening *Satinsky* clamp was *sufficiently* effective to enable the opera to get his finger to the valve. All loose clots in the appenda were removed by *this* maneuver. The large *atrial* clot was p pated after a commissurotomy and was *in* the posterior super aspect of the atrium. In case 4, the clot was *small,* and its extr tion was much easier in that the diameter of the index fin was slightly wider than the diameter of the clot, but a clot this size in the cerebral or popliteal artery could easily ca death of the tissue involved.

Resection and Anastomosis of the Bronchus Carried out in **Case of Benign Tumor.** A. *Bikfalvi* and *S. Dubecz. J. Thorac* Surg. **29:**488-496 (May) 1955 [St. Louis].

Bronchoscopy revealed a tumor in the right main bronch of a 42-year-old man. Although a biopsy suggested "oat c carcinoma," the patient's favorable general *condition and* long history interspersed with suppurative *symptoms and hemo* tyses suggested the *possibility* of a bronchial *adenoma, and th* was corroborated by a new bronchoscopic examination and t histological studies of a biopsy specimen. In order to save t middle and lower lobes, the authors decided on a bronchoplast operation. After inducing an artificial pneumothorax, a thoraco omy was performed. In the course of the operation, the upp lobe bronchus was amputated, and through this bronchotom aperture the part of the tumor that occluded the orifice of th upper lobe bronchus could be seen. Then the bronchus was cut transversely, nearly at a level with the carina. The bottom level of the transverse section was 1 cm. above the point of origin of the middle lobe bronchus. To avoid disproportion of the two lumina, the intermediate bronchus was amputated in an oblique direction. Then an end-to-end anastomosis was performed with thin and everted mattress sutures of silk, stitching up the paries membranacea of the bronchus to achieve uniformity of the lumen of the bronchus. The suture line was closed hermetically, and no narrowing of the caliber was observed. The removed section of the bronchus measured about 30 mm. The suture line was covered with mediastinal pleura dissected from the region of the vena azygos. The thorax was then closed and drained by two de Pezzer catheters. By resecting the right main bronchus and the intermediate bronchus and bridging over the resulting break by an end-to-end anastomosis it was possible to preserve the function of the middle and lower lobes, and avoid a mutilating pneumonectomy. Six months later the patient was free from symptoms and had resumed his former occupation. The case proves that a large segment of one of the main bronchi can be removed and an anastomosis can then be made without inserting a prosthesis or a graft. Although other reports indicate that at most 2 cm. can be resected, in this case the resected portion of the bronchus measured 3 cm. An artificial suture line, avoidance of overtautness, an anastomosis free from stenosis, and quick expansion of the lung are important factors in the success of this operation.

The Masked Bronchopleural Fistula. B. J. Franz and J. D. Murphy. J. Thoracic Surg. 29:512-517 (May) 1955 [St. Louis].

The symptoms and signs of postresection bronchopleural fistulas occasionally develop in a manner not suspected until a catastrophe supervenes. Failure to detect such a fistula is likely when surgeons must leave the postoperative care to staff members who are not aware of the dangers that lurk in the "alveolar leak," "space defect," "reluctant reexpansion," or any of the other euphemistic terms that are used to describe this complication. The authors apply the term "masked fistula" to lesions that become evident after a period in which the patient seems to progress satisfactorily. On the basis of statistics from Veterans Administration Hospitals, the authors demonstrate the gradually increasing incidence of segmental resections, as compared to pneumectomies and lobectomies, and they believe that with the increase in segmental resections, the possibility of small alveolar air leaks is augmented. A masked fistula developed following 24 of 625 pulmonary resections, which were performed between 1945 and 1953. The subjective signs most helpful in suspecting a masked fistula are: pain or tightness in the chest, a sensation of blowing air in the pleural cavity, and an increase of red or brown sputum when the patient lies on the side not operated on. Objective signs include: return of fever, roentgenologic evidence of an unabsorbed or increased amount of intrapleural air or the appearance of an air pocket in a new location, unexplained lowering of the intrapleural fluid level, increase in bloody sputum or fluid expectoration after instillation of fibrinolytic agents, expectoration of instilled dyes, smell or taste following instillation of an odor-producing material such as ether into the pleural cavity, bronchoscopic visualization of a fistula, bronchographic demonstration of an abnormal communication between the bronchial tree after injection into a chest wall sinus, subcutaneous emphysema, demonstration of an inexhaustible "air pocket" on thoracentesis, sudden appearance of a pneumothorax after reexpansion of the lung, and failure of the remaining lung to reexpand. A residual pleural space following any form of pulmonary resection could be an occult bronchopleural fistula, and every effort should be made to prove its existence in order to institute treatment and forestall serious complications. Since recognition of these fistulas is often difficult, available tests should be repeated as often as necessary. The initial failure of a test does not mean it will subsequently fail. It is suggested that any patent pleurocutaneous sinus be repeatedly investigated and considered as a possible omen of bronchopleurocutaneous communication.

Traumatic Chylothorax and Thoracic Duct Ligation: Case Report and Review of Literature. J. Goorwitch. J. Thoracic Surg. 29:467-479 (May) 1955 [St. Louis].

A 44-year-old woman had swelling of the face, neck, and upper chest and x-ray evidence of a left hydropneumothorax. Three days earlier she sustained an accidental stab wound to the neck, which drained milky fluid and relatively little blood and which was repaired on the day of the accident. On the basis of aspiration of this milky fluid from the left pleural cavity a diagnosis of chylopneumothorax was made, and this diagnosis was confirmed by the demonstration of fat globules taking up Sudan 3 stain and by ether extraction of fat from the pleural fluid. Although therapy was directed toward support of nutrition and promotion of spontaneous sealing of the chylous fistula, a tendency toward early encapsulation and insufficient drainage became evident. As the patient's general condition began to deteriorate, it was decided that despite the fact that the chylous fistula was cervical rather than intrathoracic and even though the loss of chyle appeared to be diminishing spontaneously, the presence of clotted chylothorax called for operative intervention. Seventeen days after the injury, a left thoracotomy was performed. The left lung was collapsed against the mediastinum. About 3 liters of pink chylous fluid and several handfuls of semiclotted gelatinous material were removed, and decortication of the lung was performed. The "peel," measuring up to 2 mm. in thickness, was thickest over the lower lobe. Reexpansion of the lung was complete. During this portion of the operation chyle could be seen accumulating slowly in the superior portion of the pleural cavity. Following limited mobilization of the esophagus mesial to the aorta, the left vagus nerve and a single thoracic duct were identified. The latter was isolated and ligated with 000 black silk. Ten months after the operation the woman had no symptoms and was doing her regular work. Increasing interest in traumatic chylothorax is due both to the safety and success of intrathoracic ligation of the thoracic duct as well as to the increasing frequency of this lesion as a complication of operations in and about the mediastinum. A total of 17 patients with traumatic chylothorax have been subjected to ligation of the thoracic duct. This was always followed by recovery, and there was no unusual morbidity. By contrast, a mortality of 19% was found among the patients in whom chylothorax was treated by methods other than by ligation of the thoracic duct. Ligation of the thoracic duct is the treatment of choice when after a brief period of management by aspiration or continuous closed drainage the chylous fistula shows no tendency to seal off spontaneously.

Eosinophilic Granuloma of Ribs: Review of Literature and Report of Two Cases with Four and Six and One-Half Year Follow-Up, Respectively. J. F. O'Neill, S. J. Skromak and P. R. Casey. J. Thoracic Surg. 29:528-540 (May) 1955 [St. Louis].

Eosinophilic granuloma of bone, although possibly a form of Letterer-Siwe's and Hand-Schüller-Christian's syndromes, and possibly related to syndromes where bone and skin, or bones and lungs are involved, can occur in one or more sites limited to the skeleton and can run a chronic benign course with complete healing. To date about 189 patients with eosinophilic granulomas of bone have been reported in the literature including the two presented here. Both of the reported patients were entirely well, four and six and one-half years, respectively, after resection of the involved rib segments. The finding of a single eosinophilic granuloma in one bone necessitates a complete skeletal survey and a careful search for involvement of the skin, lymph nodes, bone marrow, lungs, liver, and spleen or any evidence of diabetes insipidus, exophthalmos, or mental retardation. In all patients whose lesions are limited to the skeleton, healing will probably occur, the outlook improving with the age of the patient. In infants and children the prognosis must always be guarded in view of the possible development, months to years later, of Letterer-Siwe's or Hand-Schüller-Christian's syndromes. In adults, the prognosis, although better than in children, should be guarded because of nonhealing, recurrences, new lesions, or involvement of the lungs or skin. Eosinophilic granuloma of bone is diagnosed by biopsy only. Surgical treatment is probably best limited to biopsy or treatment of sequelae. X-ray treatment of lesions may relieve pain and aid in repair. Its use seems indicated until a better method becomes available.

Relapse After Pulmonary Resection During Prolonged Streptomycin-Para-Aminosalicylic Acid Treatment of Pulmonary Tuberculosis: An Analysis of 9 Relapses in 82 Cases. L. H. Capel and R. S. Mitchell. Am. J. Med. *18*:557-560 (April) 1955 [New York].

Of 82 patients with pulmonary tuberculosis who were subjected to pulmonary resection in the course of prolonged treatment, but for less than 12 months, with 1 gm. of streptomycin intramuscularly twice weekly and 12 to 16 gm. of *p*-aminosalicylic acid (PAS) by mouth daily, 11 relapsed at some time after the resection. Two of the 11 patients were seriously ill at the time of the resection and are not considered in the authors' report. Of the other nine, five were receiving combined treatment with streptomycin and PAS for the first time and four were receiving retreatment with these two drugs. Since in each of these nine patients the disease became active again at or near the site of the operation, it is suggested that the surgeon's knife may have been in part responsible for the relapse. This possibility is supported by the occurrence of relapse immediately after the resection and in the course of continued chemotherapy in two patients. Organisms from the tissue of one of these were found to be susceptible to streptomycin and PAS. In a third patient, who had bilateral disease at the outset, worse on the left, all the visible and palpable lesions on the left side were resected. Endobronchial disease was observed microscopically at the margin of the resected specimen. Relapse occurred at the site of operation and not on the opposite side. The total of only three months' chemotherapy doubtless contributed to failure in this case. Potentially dangerous visible and palpable lesions may be removed at the expense of damaging adjacent lung tissue containing invisible and impalpable lesions. This damage may reduce the ability of the lung to hold this remaining disease in check. If living tubercle bacilli are observed in resected tissue, they may also be left behind. Thus inadequate duration of chemotherapy for less than 12 months and the creation of a favorable environment for the growth of tubercle bacilli by operative tissue damage were believed to be related causally to these relapses. The selection of patients for pulmonary resection during prolonged combined treatment with streptomycin and PAS should be based on clinically demonstrated necessity rather than on the immediate safety of the operation. It is necessary to remove the persistently open cavity, which presents great mechanical impediment to healing and from which drug-resistant organisms will probably emerge. When indicated and feasible, resection should be performed early in the course of retreatment with streptomycin and PAS. Patients receiving retreatment with open cavities are in greater danger from resection than are patients with cavities who are treated originally, probably because of the more rapid emergence of drug resistance during retreatment with streptomycin and PAS. The significance of this observation increases as operation is delayed.

Extended Sympathectomy in Arterial Hypertension: I. Immediate Results on the Basis of 122 Interventions. R.-H. Martin and M. Bonamy. Arch. mal. coeur **48**:240-244 (March) 1955 (In French) [Paris, France].

The authors use an expanded Poppen operation that permits the removal both of sympathetic chains containing 10, 11, or even 12 ganglions and of the splanchnic nerves from beginning to end. The kidney is exposed to permit removal of a biopsy specimen, which should be as deep as possible. Histological examination of such specimens has invariably revealed lesions in the glomeruli, tubules, or interstitial tissue. Unilateral adrenalectomy or adrenal medullectomy is now being combined with the ablation of the sympathetic chains. The surgical treatment of hypertension by this method requires from four to six weeks of hospitalization and several months of convalescence; only patients capable of resistance can withstand the serious shock of the procedure. Analysis of the results obtained in 122 patients (225 operations) shows that the 12 immediate postoperative deaths all occurred in the first half of the series when patients were not rigidly selected and several operations were performed in an attempt to save the lives of the patients regardless of their age or the extent of their renal lesions. No deaths occurred among patients who were under 35 years of age. Careful selection, an upper age limit of 40 years, and constant supervision by thoroughly trained personnel during and after the intervention are essential if the operation is to be performed without notable risk to the patient. Observance of these requirements will smooth the postoperative period, which otherwise is apt to be difficult. Early complications usually appear as a pronounced aggravation of one of the clinical symptoms seen during the first days after the operation, e. g., intercostal pain, dyspnea, viscid and sometimes painful expectoration, a febrile syndrome with tachycardia, and dyspnea relieved by transfusions but not by antibiotics. More serious complications, such as pleural effusions, hemiplegia, cerebral edema, and cardiovascular disturbances are rare and usually transient; only three deaths in this series were due to complications of this kind. Severe orthostatic hypotension, which may be due to overextension of the sympathectomy, especially in the lumbar zone, did not appear in these patients. These results show that the decision to operate on young adults with severe hypertension resistant to medical treatment should be based, not on technical considerations, but on the developmental tendencies of the disease, the choice of patients, and the late results of the procedure.

Extended Sympathectomy in Arterial Hypertension: II. Late Results. F. Joly, A. Mathivat, J.-R. Sicot and others. Arch. mal. coeur **48**:245-276 (March) 1955 (In French) [Paris, France].

The effect of extended sympathectomy on patients with arterial hypertension can only be interpreted when the postoperative pressure readings are considered in connection with the changes in the general and functional signs and the visceral lesions. Patients who survive the operation may be divided into (1) those in whom all signs of hypertensive disease regress; (2) those in whom the arterial pressure remains irreducible, but all other hypertensive disturbances disappear; (3) those in whom the operation is without effect; and (4) those in whom improvement is only temporary. Follow-up of 80 patients ranging in age from 18 to 53 showed that 5 died after the first or second stage of the operation; 18 died from one month to 5 years after the operation; and 57 were still alive from two to six years after it. Malignant hypertension, unaffected by the operation, was responsible for 15 of the late deaths. The other three followed complete or partial remissions lasting five years or more. The 19 patients in group 1 and the 17 in group 2 were able to resume normal activity within a few months, or one year at the most, after the operation. All but two of the 17 in group 3 were over 40 years of age and all had severe impairment resulting from their disease. The radiological and electrocardiographic changes, which were particularly frequent in this group, were not influenced by the operation, but retinal changes (hemorrhage with or without papilloretinal edema) disappeared completely in 8 of the 10 patients in whom they were present. Group 4, in which the hypertensive syndrome reappears after a complete remission, is important from the prognostic point of view, because, before the recurrence takes place, everything seems to point to the success of the operation. Some of the patients in group 1, therefore, may later have to be added to the five now listed in group 4. The postoperative findings in this series show that (1) the drop in pressure is often transient in character; (2) the clinical and manometric findings are not always in agreement; and (3) the period of postoperative stabilization of the disease varies with each patient. All attempts to establish precise indications for sympathectomy in patients with hypertension have so far failed, and the results of the operation are so often transitory that it should be reserved for patients in whom other methods of treatment have proved unsuccessful and in whom it is not contraindicated by age or other adverse conditions.

asis Ulcers: An Evaluation of the Effectiveness of Three ethods of Therapy and the Implication of Obliterative Cutaeous Lymphangitis as a Credible Etiologic Factor. C. A. Moyer d H. R. Butcher Jr. Ann. Surg. **141**:577-588 (May) 1955 hiladelphia].

Investigations were undertaken to evaluate the following ethods of treating chronic ulcers of the leg: (1) the injection ligation of varices and the wearing of Unna's boots, elastic ndages, or elastic stockings: (2) the injection or ligation of rices, the wearing of elastic supports, and the grafting of the cer without excision or after its excision, with only a narrow nd 'of surrounding skin; and (3) the ligation, excision, or ipping of varices; the immediate split grafting of the cutaneous fect after the excision of the ulcer and all thickened skin and scia about it; and the wearing of elastic supports thereafter. e third method was best, and the second method was better an the first. The likelihood of failure with the third method is e greater the larger the ulcer, the greater the number of ulcers, e more evident the postoperative edema, and the poorer the ke of graft or the slower the epithelization in small localized imary graft failures. Age, sex, nutritional status, history of tecedent phlebitis, duration and position of the ulcer, the tent of varices, the presence of preoperative edema, and the pe of prior therapy had no apparent relationship to the success failure of the third method of treatment. The use of the ird method whether successful or not did not place life, limb, health in significantly greater jeopardy than they were in fore the treatment was instituted. The authors urge that (1) sorbable ligatures be used for hemostasis; (2) the excision clude the base of the ulcer together with all surrounding elastic skin and thickened fascia; (3) the defect be covered mediately with a split-thickness cutaneous autograft; (4) the et and legs remain on the bed for from 14 to 21 days, since pendency of the leg before the 14th day is attended by lifting the graft from its base by confluent petechial hemorrhages; d (5) elastic supports be worn indefinitely. Whereas the dermal nphatics were found obliterated in the skin adjacent to stasis cers, they were present and initially dilated in the successful in grafts. The superficial lymphatics of the grafts soon established connections with the dermal lymphatics of the skin about em. In areas adjacent to ulcers arising after primary graft take, lymphatics were patent, but to date, no recurrent ulcer has peared in any area of a graft shown to possess lymphatics.

e Management of Bleeding Esophageal Varices Associated th Cirrhosis of the Liver. J. E. Hamilton. Ann. Surg. **141**: 7-647 (May) 1955 [Philadelphia].

The varices associated with cirrhosis of the liver are secondary the increased pressure caused by intrahepatic portal obstruction, but since it is not clear just how this portal obstruction is oduced Hamilton summarizes the chief working hypotheses d the different therapeutic plans arising therefrom, particularly e views on hepatic artery ligation and portal systemic shunts. esophageal bleeding is at an alarming rate or does not spond promptly to bed rest and transfusion, double balloon mponade has become the first line of defense against exsanguiation. In spite of his earlier enthusiasm and the encouraging ports on its use by others it has proved disappointing to the thor, in that bleeding was not controlled in 11 of 20 patients, d 15 of the 20 patients died during the hospitalization in hich double balloon tamponade was tried. He suggests that e results might be improved by more heroic blood replacement d earlier resort to ligation of varices. Of the various procedures at have been tried in the treatment of varices including packing e superior and posterior mediastina with gauze to stimulate colteral circulation, stripping the outer surface of the lower ophagus of its blood supply, plus vagotomy, resection of art or all of the stomach to prevent regurgitation of acid contnts into the esophagus and erosion of varices, hepatic arterial gation, and portal-systemic shunts, the author considers the st the most feasible, but states that arterial ligation has reeived much attention of late. Reviewing the experience of 14 uthors with ligation of the hepatic artery, splenic artery, and ometimes also the left gastric artery, in treating hemorrhage and ascites associated with cirrhosis, he found that among 87 patients 23 died in the hospital and at least 10 more deaths occurred within a year after operation. Bleeding recurred in 60% of the patients. The author therefore questions the safety and efficacy of this procedure. Twenty-nine portacaval shunts and four splenorenal shunts performed on dogs in the laboratory were the background for eight such operations that the author performed on human subjects. If the spleen is large he prefers splenectomy and splenorenal shunt because: (1) the large spleen assures an adequate-sized vein and anastomosis; (2) splenectomy will obviate hypersplenism; and (3) the procedure is slightly the safer of the two. On the other hand, if the spleen is relatively small, a portacaval anastomosis is advisable as it assures a stoma at least 1.5 cm. in diameter. If the portal vein and vena cava are widely separated one must decide between an end-to-side shunt with ligation of the proximal stump of the portal vein or a femoral vein graft between the two veins. One of four patients who were good risks and two of four who were poor risks died. Except for one minor and unverified episode, none of the five who survived bled further. Their general health and liver function, following a temporary decline after operation, returned to a level not significantly better or worse than before the operation.

Indications and Late Results of Ligation of Inferior Vena Cava. J. A. Kirtley Jr., D. H. Riddell and E. C. Hamilton. Ann. Surg. **141**:653-663 (May) 1955 [Philadelphia].

Ligation of the inferior vena cava was performed on seven different indications in 34 patients. Multiple pulmonary emboli was the indication for ligation in 19; other indications were: massive infarction with obscure origin of embolus, ascending thrombosis of the lower extremity above the inguinal ligament with embolus; accidental trauma to the inferior vena cava, septic pelvic thrombophlebitis, embolism in which anticoagulants were contraindicated, and in some patients prophylactic ligation performed during abdominal exploration. The authors regard these indications as valid. Their belief that venous ligation at a level lower than the inferior vena cava is not justified was substantiated. Extraperitoneal operation is regarded as the best technique for ligation of the inferior vena cava. In the postoperative period circular elastic bandages are applied from the base of the toes to the groin bilaterally. The foot of the bed is elevated on 6-in. blocks, and the patient is kept at bed rest for two weeks, being allowed up to void or to sit up for meals only. The authors no longer believe that anticoagulants are essential during the postligation period. Bicycle exercises of the legs are begun during the second week, while the patient is still in bed. Four patients died during the operation. Nine patients have died in all, and one could not be followed. Twenty-two of the remaining 24 patients were capable of normal activity when last seen. Fourteen of the patients have been followed from 25 to 85 months, and the late disabling sequelae (severe edema, ulceration, dermatitis, and pain) were found in only two patients. Those lower extremities with preligation evidence of thrombophlebitis have more serious sequelae than those extremities that were free of disease before ligation. The authors believe that the low incidence of late deleterious effects of vena caval ligation should encourage its use when a true indication for ligation exists.

Use of Reenforcing Metallic Mesh Gauze in Repair of Large Postoperative Ventral Hernias. T. J. Floyd Jr. J. M. A. Georgia 44:225-228 (May) 1955 [Atlanta, Ga.].

The author performed 14 postoperative ventral hernioplasties using tantalum mesh wire as reinforcing suture material. The ages of the patients ranged from 31 to 73 years (average 52). There were 4 men and 10 women. Four had upper abdominal hernias (each following a cholecystectomy, two with a split rectus incision and two with a transverse incision); of the other 10, one had a recurrent inguinal hernia, and nine had subumbilical hernias. Of these nine, three hernias occurred after appendectomies with split rectus incisions, and six after pelvic operations with midline incisions. Of these 14 patients one had a recurrence. There were no deaths in this series. The author believes that the use of this reinforcing material allows of much better results than could be obtained with older methods in the old, weak, obese, poor risk type of patient who is prone to postoperative ventral hernia.

Perforation of the Rectosigmoid Colon Due to Straining. M. P. Birbis. Bordeaux chir., pp. 17-25 (Jan.) 1955 (In French) [Bordeaux, France].

A report is given of four men in whom perforation of the rectosigmoid colon occurred on straining. These patients, whose ages ranged from 38 to 69 years, had suffered from constipation prior to the rupture but had no other complaints referable to the digestive tract. The perforations had a punched-out appearance and were located on the free edge of the sigmoid or rectosigmoid region. In three patients a large, hard stercoroma was found in the pararectal pouch. It would seem that a hernia forming in a weak spot in these chronically constipated patients must be the basic cause of the rupture. Hemorrhage from the rectum, severe abdominal pain, and other signs of peritonitis such as fever follow the rupture. All the patients recovered after surgical closure of the perforation; one died in cachexia resulting from a neoplasm of the larynx, and the others were cured.

Thoughts on Early Diagnosis and Recent Trends in Treatment of Lumbar Pott's Disease in the Adult: With Reference to 82 Cases. S. De Sèze, S. Rampon and C. Guérin. Semaine hôp. Paris 31:1712-1729 (May 20) 1955 (In French) [Paris, France].

The fact that patients with tuberculosis of the vertebrae (Pott's disease) can now be safely operated on under the protection of chemotherapy increases the importance of early diagnosis, because complete removal of the tuberculous focus is possible if the operation is performed while the lesions are still localized. Study of 103 patients with Pott's disease showed that in 82 the condition was localized in the lumbar spine and that the lumbosacral joint was affected oftener than any other part of the spinal column. Most (60%) of these 82 patients were young adults, 31.5% were in the 40 to 60 year age group, and 8.5% were over 60. The diagnostic signs—abscess in the iliac fossa, incipient paraplegia, and psoitis—mentioned in the standard descriptions of Pott's disease were rarely seen; pain, on the other hand, which is usually said not to be present, was in all patients the first symptom noticed. It was found in two principal forms—ordinary backache and referred crural or sciatic pain. The clinical investigation of patients in whom Pott's disease is suspected should consist of (1) an examination of the spine, (2) a neurological examination, (3) a search for abscesses, (4) study of the general signs and of the biological signs of inflammation, and (5) study of the history and a search for other tuberculous foci. The results of this investigation, however, though helpful, are seldom conclusive, because neither the characteristic stiffness of the spine nor any of the other signs suggestive of Pott's disease can be constantly detected. Radiological study, on the contrary, provides a secure basis for the diagnosis by demonstrating the spondylodiskitis that constitutes its fundamental lesion. Some evidence of a change in the intervertebral space is always visible on the standard x-ray films in patients with Pott's disease, but when the reading of the films is complicated by the existence of a congenital malformation or some other condition, tomography may be used to clarify the diagnosis. Puncture biopsy of the vertebral body and direct surgical exploration of the lesion sometimes serve as useful supplementary measures in doubtful cases. Treatment may be either medical or medical and surgical. Chemotherapy usually produces a rapid improvement in the patient's general condition, but since the period of immobilization can be substantially shortened and the quality of the cure improved by removal of the tuberculous focus, the authors advocate the combined method, in which the medical treatment is intended to prepare the patient for the operation and to consolidate his recovery afterwards.

The Problem of the Broken Judet Prosthesis. K. H. Pridi Bone & Joint Surg. 37B:224-227 (May) 1955 [London, Engl

In using the Smith-Petersen cup operation in arthroplast the hip, the author had learned that the blood supply of stump of the femoral neck was the all-important factor in d mining the end-result. When Judet (1950) introduced the ac prosthesis it seemed to the author far sounder to get rid of part of the bone in which the circulation was endangered e by a vascular calamity or by sclerotic changes in the bone i and he decided to try the Judet arthroplasty. The imme results were better. The patients became ambulatory earlier, the range of movement was superior to that after the cup o tion. This improvement was only transient, continuing thr the first and sometimes the second year. At about this stag improvement after the Judet operation appeared to halt, complications began to appear. A falling off of performan a previously satisfactory hip and the gradual reappearanc pain and muscle spasm became evident. The radiograph at period suggested that the prosthesis was loose. Then, on watc these patients for several months, occasionally a typical fra of the prosthesis that resembled an intracapsular fracture o femur would be observed. The author has encountered broken prostheses in a series of about 100 patients. He beli that the acrylic head prosthesis operation should be aband for any patient who intends to lead an active life. The orgin of the operation have discovered that it was not univer satisfactory, and they have changed their prosthesis t oblique-angled femoral head, still made of methyl methacry Eighty per cent of the author's patients are satisfied, an believes that the operation is a good one, but the materi the prosthesis has been found wanting. It must be expected fracture of the prosthesis will occur in about 10%, and as goes on the number might be greater. With regard to the t ment of these patients the author says that in the early st when radiographs show that the stem is eccentric, three m in plaster might allow the prosthesis to gain sufficient fix with fibrous tissue to afford relief, but if this does not help operation should be revised and a more durable type of thesis used. A Küntscher or Watson-Jones nail is not st enough and will break in time. An alternative solution in pat with fractured prosthesis lies in the Girdlestone (1945) o tion, which is final and introduces no new foreign subst that may break and no substance that will wear.

Present Status of Surgical Treatment of Varicose Veins Special Emphasis on Vein Stripping. C. A. Griffith and H. Harkins. West. J. Surg. 63:245-252 (May) 1955 [Seattle, Wa

Surgical vein stripping for the treatment of varicosities introduced before World War I, more or less abandoned betw the two wars, and revived after 1937. Essential to the suc of this therapy is coincident high ligation and thorough divi of the branches of the greater saphenous vein at the regio the fossa ovalis. Most patients with varicose veins severe eno to warrant operation will benefit most from a surgical cedure that may include: (1) high ligation of the saphenous at the fossa ovalis, (2) ligation and division of all branche the saphenofemoral junction, (3) careful inclusion of branches of a bifid saphenous, (4) stripping of the greater sa nous vein from groin to ankle, (5) excision of large vari branches and plexuses, and (6) stripping of the lesser saphen vein. From these six fundamental procedures, a choice can made for individual treatment of the patient with varicose ve

Pseudo-Metastases (Benign Tumors in Patients Previously erated on for a Malignant Neoplasm). A. C. De Vet and H. D. Walder. Arch. chir. neerl. 7:78-84 (No. 1) 1955 (In Engli [Arnhem, Netherlands].

When a neoplasm develops in a patient previously operated for malignant tumor, it is generally assumed that the n growth is a metastasis. Benign tumors may develop in patie who have been operated on for cancer. The authors obser three such patients within two months, which proves that i by no means a rare occurrence. The patients in question h enign tumors of the spinal column. This points up the necessity differentiating between metastases and benign processes of e spinal column. The metastatic nature of a neoplasm should doubted if the patient's general condition is good. In patients ith metastasis in the spinal cord paresis generally precedes nsory disturbances. Metastases in the spinal column or cord arly always give rise to violent pain. Such pain was present two of the reported patients and therefore could not serve a differentiating symptom. Metastases to the spinal cord can nerally be ruled out in the absence of radiological changes. etastases are generally associated with an increased sedimentan rate, and the blood calcium and phosphatase values are also ten increased. These values were normal in the reported tients. The fact that carcinomas of bladder and rectum hardly er give rise to metastases in the spinal column should also be ken into account.

yperparathyroidism. W. F. Suermondt. Arch. chir. neerl. 7:1- (No. 1) 1955 (In English) [Arnhem, Netherlands].

The most important finding in hyperparathyroidism is hyperlcemia, accompanied by hypophosphatemia, hypercalciuria, d hyperphosphaturia. The alkaline phosphatase content of the ood rises as the severity of the osseous changes increases. A w calcium content of the cerebrospinal fluid supports the diagsis. The protein content of the blood and the renal function ould likewise be investigated, because they are important for correct diagnosis. In the presence of severe renal lesions, the lcium content of the blood may be reduced to normal values the result of the retention of phosphates. During the operan all four parathyroids should be exposed, because adenomas y be bilateral; this was the case in 2 of 13 patients in the thor's series. Impairment of the renal function and increase in od pressure make the prognosis more unfavorable. The diagsis should be made early, and treatment should be instituted fore irreversible renal lesions have developed, because the ter will become more severe, even after the hyperparathyroidn has been cured by extirpation of the adenoma.

YNECOLOGY & OBSTETRICS

eatment of Trichomonas, Monilia and Mixed Infections of e Vagina. A. Saucier and R. Simard. Canad. M. A. J. 72:584-5 (April 15) 1955 [Toronto, Canada].

Propi-Vaginal is a vaginal suppository containing sodium opionate, propionic acid, and diiodohydroxyquinoline with ded lactose, dextrose, boric acid, and lactic acid. This agent s used in the treatment of 41 patients with vaginitis due to ichomonas or Monilia organisms or both. A vaginal smear s obtained from each patient, after which a 15-day treatment th three suppositories a day for 3 days and two a day for days was instituted. Then another smear was taken, but atment was continued with one suppository a day for 15 days gardless of smear findings. After this 30-day treatment period other control smear was taken, and finally, 15 days later, a t control examination was made. If the second control smear s still positive, treatment was continued with one suppository ily for 15 days, at the end of which period another smear s taken. This procedure was repeated until a negative result s obtained. Not one case of pain or erythema from the drug curred in this series. Complete cure was obtained in about % of cases. The five patients whose smears remained positive reverted to that state were the most careless in their personal giene.

emophilus Vaginalis Vaginitis: A Newly Defined Specific Infecn Previously Classified "Nonspecific" Vaginitis. H. L. Gardner nd C. D. Dukes. Am. J. Obst. & Gynec. 69:962-976 (May) 1955 t. Louis].

Gardner states that microscopic examination of material from e majority of patients with bacterial vaginitis shows solid elds of small pleomorphic gram-negative bacilli. Vaginal marial had been sporadically submitted to clinical laboratories for culture, but a logical correlation could never be drawn between the culture results and the stained smears, a point that suggested that the organism in the smears was not appearing in the cultures. Dukes studied material from a typical case of bacterial vaginitis. Although microscopic examination showed the characteristic organism in large numbers, no growth was obtained in culture mediums. In material from a second patient a large variety of highly enriched mediums was used, and incubations were made under various oxygen and carbon dioxide tensions. At the end of 48 hours, a 10% sheep blood agar plate, incubated under reduced oxygen tension, was found to contain thousands of minute transparent colonies that could be detected only by reflected light. A smear from these colonies showed bacilli similar to those seen on the direct smear. After finding the identical organism in pure culture in 13 of the next 14 patients considered as having bacterial vaginitis, it appeared that a specific etiological agent had been found to explain the majority of cases of "nonspecific" bacterial vaginitis. The authors assigned the name Hemophilus vaginalis to the newly isolated bacillus. Studies were made on 1,181 female patients. Sexually active women constituted the large majority of the patients but also included were a few children and postmenopausal women. The group included 602 obstetric and 579 gynecologic patients. Microscopic examinations of wet mounts and stained smears were made on patients with symptoms of vaginitis. All patients with an abnormal discharge, considered vaginal in origin, who showed no trichomonads or Monilia by microscopic examination, were subjected to bacteriological studies. Sixty-one of 80 patients with smears positive for trichomonads and 47 of 79 patients with moniliasis were also studied bacteriologically. Studies were also made on control groups. Of the 138 women in whom bacterial vaginitis was detected, 127 (92%) were attributed to Hemophilus vaginalis. The authors present proof of the pathogenicity of this organism and direct attention to the diagnostic character of certain epithelial cells designated "clue cells." H. vaginalis organisms isolated from 41 patients were tested against various antibiotics. The organism was found to be sensitive to bacitracin and to the tetracyclines. The tetracycline group was used for treatment in the early part of the study. When it was found that after treatment with the tetracyclines secondary infections with Monilia, Proteus, or micrococci (staphylococci) were found to be a frequent aftermath, resort was made to intravaginal triple sulfonamide (Ortho) cream. This triple sulfonamide effected cure in 10 of 13 patients. It has the advantage of not encouraging secondary infections. The necessity of the simultaneous treatment of husbands is stressed.

Endometriosis as Sequel of Genital Anomaly. L. Schmidt. Zentralbl. Gynäk. 77:183-187 (No. 5) 1955 (In German) [Leipzig, Germany].

A 16-year-old girl experienced severe cramp-like pains in the right hypogastric region, as well as nausea and vomiting during her menstrual periods. In addition, and during the intermenstrual period, she had drawing pains in the right side of her abdomen. Examination indicated that her uterus was of normal size, but slightly displaced to the left. To the right of the uterus, a mass, the size of an apple, that, however, was not sensitive to pressure was palpated. A tumor of the uterine adnexa, possibly a dermoid cyst, was suspected, but operation revealed instead a duplication of the uterus. Whereas the uterus on the left side was connected with the vagina, that on the right side was closed at the level of the internal uterine os and was connected neither with the vagina nor with the left horn. The left ovary was normal, but the adnexa on the right side were buried in a conglomerate mass and covered by omentum. The right-sided duplicate uterus together with its attachments was removed. Examination of the surgical specimen revealed that the uterine tube had been transformed into a hydrosalpinx. Microscopic examination revealed endometriosis in the basal portions of the myometrium. An extensive endometriosis with old and more recent hemorrhages was found also between tube and omentum. In such a patient it may be difficult to decide whether the endometriosis is a sequel of the anomaly or an accidental concurrence. In the reported case normal menstrual bleeding from duplicate uterus was impossible because of closure, and so it seems plausible that endometriosis was caused by stasis and reflux of the menstrual flow into the abdominal cavity (Sampson's implantation theory). The patient had a normal recovery.

Cesarean Hysterectomy. W. C. Bradbury. West. J. Surg. **63:** 232-244 (May) 1955 [Seattle, Wash.].

A review is made of 22,832 deliveries, of which 1,188 were by cesarean section. Among these, 84 cesarean hysterectomies were performed. There were no maternal deaths. A gradual increase in the percentage of cesarean sections, repeated cesarean sections, and cesarean hysterectomies was noted in the series. Cesarean hysterectomy proved to be a useful, and at times lifesaving, measure. The subtotal procedure is no more difficult to carry out than that done in the nonpregnant patient. Although it accomplishes the immediate need in any case, total cesarean hysterectomy is gradually replacing the subtotal operation. With modern equipment, good anesthesia, good assistance, and adequate training, the entire uterus can safely be removed at the time of cesarean section. Certain technical modifications of the nonpregnant procedure facilitate the total operation and produce better results. Stable patients approaching the menopause can safely be selected for cesarean hysterectomy as a means of sterilization when cesarean section and sterilization are indicated. Cesarean hysterectomy in younger patients should be limited to those with a primary indication for hysterectomy.

Use of Cortisone in the Prevention of Erythroblastosis in Infants of Rh-Sensitized Mothers. I. Dyer, R. C. Smith, J. Dent and others. Am. J. Obst. & Gynec. **69:**1083-1093 (May) 1955 [St. Louis].

Once a mother has produced an infant with the classical effects of Rh sensitivity, the chances are great that in subsequent pregnancies the infants will be equally affected and probably show greater depths of the hemolytic process. No reduction of maternal or infant sensitivity was noted with the use of ethinyl disulfonate or with haptens. Premature termination of pregnancy has not improved the fetal salvage. To the contrary, the prematurity thus induced complicates the management of an already complicated problem. Forty-five Rh-negative isoimmunized pregnant women, 40 of whom had previously produced babies affected by erythroblastosis, were given cortisone in the last trimester of pregnancy in an attempt to improve fetal survival. With meticulous control and selection of patients, the drug was well tolerated by both mother and baby. There was one major reaction in a mother, none in any infant. All reactions were reversible. There were 37 live babies, 8 stillbirths, and 5 neonatal deaths. Five liveborn babies were Rh negative. The over-all fetal mortality rate was 28.8% corrected to 15.5%, if two preventable deaths and four instances of inadequate therapy are deleted. The women studied represent a pregnant population of approximately 15,000. The over-all infant survival correlated with past obstetrical history and duration of drug therapy has not shown sufficient improvement to justify continued use of cortisone in treatment or prevention of erythroblastosis fetalis. The potent weapon in this problem still remains immediate exchange transfusion.

Combined Steroids to Suppress Lactation. P. W. Fiskio. GP **11:** 70-72 (May) 1955 [Kansas City, Mo.].

The authors administered Premarin (water-soluble conjugated equine estrogens) with methyltestosterone to 267 women to produce inhibition of lactation during the puerperium. The decision for suppression came from the patients themselves in 261 instances and was medically recommended in only 6. The dosage was three tablets every four hours for five doses, starting immediately on the patient's return to her room after delivery. Each tablet contained 1.25 mg. of the estrogens and 10 mg. of methyltestosterone. All patients were followed for at least six weeks after delivery. One hundred sixty-six patients (62.4%) who had no breast engorgement or untoward symptoms from the medication were considered to have had excellent results. Those who noticed a full but not painful sensation in the breasts were classified as having mild breast engorgement and were considered to have had good results; this category included 91 patients (33.8%). Ten patients (3.8%) with a full sensation and slight lactorrhea were classified as having moderate breast engorgement and were considered to have had only fair results. These symptoms occurred on the sixth or seventh day post partum. No patient was considered to have had poor results, since none had severe engorgement, recurrence of lactation, or untoward side effects. Thus, the author considers his plan the method of choice in the suppression of lactation.

PEDIATRICS

Prophylaxis Against Group A Streptococci in Rheumatic Fever The Use of Single Monthly Injections of Benzathine Penicilli G. G. H. Stollerman, J. H. Rusoff and I. Hirschfeld. New England J. Med. **252:**787-792 (May 12) 1955 [Boston].

Monthly injections of benzathine penicillin G were given t 145 patients with rheumatic fever in order to prevent recurrences. The patients ranged in age from 6 to 16 years and ha had an attack of acute rheumatic fever within 18 months at th time prophylaxis was initiated. At each clinic visit (every fou weeks) throat cultures were made, blood was obtained fo determination of antistreptolysin O titer and erythrocyte sed mentation rate, and at six-month intervals electrocardiogram were obtained and fluoroscopy was performed. Patients wh failed to keep a clinic appointment were seen within 48 hour by a visiting nurse, who administered benzathine penicillin an obtained throat swabs and blood specimens. In addition, th nurse investigated reported illness and made throat culture when respiratory infection was encountered. A physician mad a home visit when symptoms suggestive of rheumatic fever or related complication were reported. Benzathine penicillin was injected in a dose of 1,200,000 units contained in a volum of 2 cc. This dose was supplied in a disposable cartridge an was injected deeply into the upper outer quadrant of the buttoc Treatment was continued from September, 1952, to Augus 1954. In addition to the outpatients treated, 265 patients ho pitalized in the acute and convalescent stages of rheumati fever received single monthly injections of 1,200,000 units benzathine penicillin G. No recurrences of rheumatic fever wer observed in the 145 patients who received monthly intramuscul injections of benzathine penicillin G, and only 4 patients gav evidence of recurrence of infection with group A streptococ during the period of study. Of 74 patients who had clinicall apparent rheumatic heart disease on admission to the study, were reclassified as having no heart disease at the end of th study when organic murmurs had disappeared and heart siz had reverted to normal. Five additional patients showed im provement in cardiac status on the basis of the disappearance an organic murmur or return of heart size to normal. Evidenc of progression of heart disease appeared in only three patient a new organic murmur appearing in two and progressive cardia enlargement in the other. A total of 4,871 injections of benz thine penicillin G was administered to 410 patients. The averag number of injections per patient was 12. Most patients exper enced deep muscle soreness and tenderness that lasted for on to three days. This reaction was usually accepted without undu complaint. Only one patient dropped out of the study solely fo this reason. Reactions assumed to be due to penicillin hypersensitivity occurred in five patients. The annual recurrence rat of rheumatic fever (in New York) was about 15% in the year 1936 to 1942, when antistreptococcic prophylaxis was not generally used. The annual rate of recurrence in patients who received either sulfadiazine or penicillin by mouth in other New York clinics was 2.3%, representing a decrease of 85%. The total absence of recurrences in the group treated with benzathine penicillin G may be significant, but an adequate comparison of the various forms of prophylaxis will require more extensive observations on larger numbers of patients. The daily oral administration of sulfonamides or penicillin has the disadvantage that patients are apt to forget to take their medication regularly, and for this reason monthly injections of 1,200,000 units of benzathine penicillin G afford a more reliable method of prophylaxis against recurrences of rheumatic fever.

The Single Approach to Streptococcic Prophylaxis. R. A. Tidwell. Northwest Med. 54:467-471 (May) 1955 [Seattle, Wash.].

Benzathine penicillin, a highly insoluble salt of penicillin, has been demonstrated as the most efficient agent for the production of penicillin blood levels that are required for the prophylaxis of respiratory infection by beta-hemolytic streptococci. This drug is now recognized as indispensable to the long-term management of patients with a history of rheumatic fever. Control of the Streptococcus has been achieved by giving one tablet or teaspoonful daily or one injection per month. This constitutes the "single approach" to streptococcic prophylaxis. Tidwell instituted such a prophylactic program in 1952, reporting observations on an initial group of 59 patients in *Northwest Medicine* (54:470 [May] 1954; abstracted in *J. A. M. A.*, **156**:87 [Sept. 4] 1954). One 200,000 unit tablet of benzathine penicillin was given daily. The present report is concerned with the continuation of the prophylactic program in 34 of the original 59 patients. This group includes 7 with congenital heart disease, 11 with rheumatic fever or rheumatic heart disease, one with asthma, 6 with recurrent respiratory infections, one with nephritis, and 7 siblings. One child, who, owing to an oversight, was not included in the program throughout the summer of 1953, had a strongly positive culture for beta-hemolytic streptococci, type X, on return. Despite the rather constant exposure of all the patients and the various intercurrent infections experienced by most, throat cultures taken at monthly intervals or less throughout the course remained consistently negative for beta-hemolytic streptococci except in two patients, in one of whom the organism temporarily appeared in the throat twice when medication was interrupted, and in one whose throat was cleared promptly by doubling the dose. The presence of tonsils did not interfere with effective prophylaxis. There was no recurrence of rheumatic fever, evidence of subacute bacterial endocarditis, or aggravation of renal disease or asthma in the children ill at the start of the program. No early or late suppurative or nonsuppurative sequelae followed any of the infections that occurred in this series. Benzathine penicillin was accepted willingly by all of the children. No evidence of hypersensitivity or drug resistance developed.

Control of Group A Streptococcal Infections and their Sequelae. L. W. Wannamaker. Journal-Lancet 75:197-214 (May) 1955 [Minneapolis].

There no longer seems to be any reasonable doubt concerning the importance of group A streptococcic infections in the development of acute rheumatic fever and acute glomerulonephritis. In spite of this undeniable relationship, the pathogenesis of these diseases is still not clear. Variation in host response is well recognized but poorly understood. The antigen-antibody theory remains a fascinating hypothesis, but definite proof of its role in the pathogenesis of acute rheumatic fever or acute nephritis has not been produced; furthermore, the possible importance of bacterial hypersensitivity is not known. Recent studies have attracted attention to the significance of strain variation in causing acute glomerulonephritis and to the importance of the persistence of the infecting Streptococcus in the pathogenesis of acute rheumatic fever. At present, the control of the two diseases can best be accomplished through the control of acute streptococcic infections. Adequate treatment of these infections with penicillin prevents acute rheumatic fever and probably reduces the incidence of acute glomerulonephritis. For therapy to be adequate, the organism must be eradicated. This seems to depend primarily on the length of time treatment is continued. Continuous prophylaxis with either sulfadiazine or penicillin prevents rheumatic recurrences by preventing streptococcic infection. Prophylaxis should be continued as long as risk of infection or cardiac damage is great. Complete control of streptococcic infections and their sequelae cannot be expected from the use of antimicrobial agents. The difficulties of differential diagnosis of upper respiratory infections and the frequency of subclinical and atypical streptococcic infections make this impossible. In addition, the long-term effects of the repeated use of these agents are not known. Further advances in the prevention of these diseases will depend on additional knowledge of their pathogenesis and continued inquiry into modes of spread and immunizing methods.

Chlorpromazine in the Control of Vomiting in Children: Preliminary Clinical Evaluation. C. W. Daeschner, J. L. Clark, G. Y. George and R. A. Frankel. A. M. A. Am. J. Dis. Child. 89:525-530 (May) 1955 [Chicago].

Chlorpromazine hydrochloride will control vomiting in adults. The studies described in this paper were concerned with ascertaining effective dosage schedules for children, evaluating therapeutic efficacy, and observing side-effects. During 18 months, 100 clinical trials of chlorpromazine were carried out in infants and children, ranging in age from 6 weeks to 14 years, the majority being under 5 years. Vomiting was caused in 64 of the children by gastroenteritis either nonspecific or associated with acute infections. Other causes were: chalasia of the esophagus, ketogenic diet, diabetes mellitus with acidosis, irradiation therapy for such conditions as leukemia, lymphosarcoma or other malignancies, chemical gastritis due to acetylsalicylic acid therapy, pyloric stenosis, terminal osteosarcoma, postacute bulbar poliomyelitis, appendicitis, and encephalitis. The chlorpromazine was given intramuscularly, by mouth, or in the form of suppositories. Some patients were treated with more than one dosage schedule in an effort to determine the most effective dose range. The intramuscular injections consisted of a solution in isotonic sodium chloride solution ranging in concentration from 1 to 5 mg. per cubic centimeter. The syrup contained 2.5 mg. per cubic centimeter (10 mg. per 4 cc.), and the tablets contained 5, 10, or 25 mg., depending on the dose desired. The suppositories contained from 25 to 50 mg. In 83 of the patients the response was excellent or good. In an additional nine there was a decrease in the vomiting, but the role of chlorpromazine was not definite. In eight patients no clinical improvement was noted. Although toxicity was not a significant factor, since chlorpromazine is a new drug the following precautions should be observed: (1) in patients receiving the drug for more than a few days the possibility of agranulocytosis should be considered; (2) it would seem injudicious to treat patients known to have liver disease or jaundice with chlorpromazine, and the drug should be discontinued in any patient in whom jaundice appears; (3) a helpful soporific effect is a common companion of effective chlorpromazine therapy; pharmacological studies have shown that when chlorpromazine is given concomitantly with central-nervous-system-depressants it may potentiate their effect; and (4) the cause of vomiting should be determined prior to therapy with chlorpromazine, since the latter may mask diagnostic or prognostic signs and symptoms. Its use as an antiemetic in central-nervous-system injury or intestinal obstruction is debatable. Chlorpromazine is an effective antiemetic agent for the symptomatic control of vomiting in children. It appears to have a wide range of usefulness.

Use of Cobalt in Some Common Anemias of Childhood. B. L. Coles. Arch. Dis. Childhood 30:121-126 (April) 1955 [London, England].

In view of the unsatisfactory response to iron of certain common anemias in childhood, a series of patients was treated with cobalt to see whether this substance would prove a satisfactory substitute for iron in refractory cases. Fifty children were treated, and all had types of anemia usually showing a poor response to iron, liver, and other hemopoietic agents. There were 31 children in whom anemia was associated with infection; 10 were anemic premature infants; and three were infants with Rh incompatibility, who showed a residual anemia in spite of transfusions. One patient had severe physiological anemia, and in one anemia developed after Ramstedt's operation, although there was no evidence of gastric hemorrhage. The remaining patients comprised twins with a fairly severe anemia of unknown etiology and a patient with erythrogenesis imperfecta. This last patient was the only one who failed to respond to cobalt therapy. Cobalt sulfate was given by mouth in daily doses of 20 or 25 mg. Treatment was generally continued for about three weeks. No toxic effects were observed with these doses. In an effort to elucidate the still unknown mode of action of cobalt therapy in anemia, marrow punctures were made in 12 children before and after treatment. In six of these anemia was associated with infection and six were premature infants. All 12 responded satisfactorily as far the the peripheral blood was concerned. Nine showed a rise in the total erythroid precursors in the marrow, associated with a fall in the myeloid/erythroid ratio. Erythroid marrow hyperplasia suggests that one action of cobalt is a direct stimulation of the marrow erythroid tissue. Similar changes in the erythroid tissue have been observed by others who used cobalt in anemia. The reticulocyte response to cobalt was not dramatic.

Technical Note on Intrafunicular Transfusion in Treatment of Asphyctic Shock of Newborn Infant. G. Ferraris. Minerva ginec. 7:312-315 (April 15) 1955 (In Italian) [Turin, Italy].

Transfusion into the umbilical vein of newborn infants with severe asphyxia aims at checking the vascular hemodynamic imbalance, which is believed to be the main cause of the shock that accompanies this condition. The standard procedures used in the resuscitation of the newborn infant—aspiration of the respiratory pathways, heating, and administration of oxygen—are also carried out concurrently. At the University of Perugia these procedures are carried out by four trained and experienced persons who work as a team and who can be ready to start in less than one minute after the delivery. A no. 9 catheter, 14 to 16 cm. in length, is threaded through the umbilical vein, and the blood-containing syringe is connected to the other end of the catheter. The average quantity of blood administered varies from 30 to 60 cc., according to the infant's weight, muscle tone, cardiovascular condition, and quantity of blood lost. Immediately after the transfusion of a few cubic centimeters of blood, a sudden improvement in the general condition is observed together with the first respiratory movements. This sudden improvement has been ascribed to stimulation of particular vascular reflexes or a direct mechanical action in the blood stream.

Ophthalmia Neonatorum. H. L. Ormsby. Canad. M. A. J. 72: 576-580 (April 15) 1955 [Toronto, Canada].

In a study of 8,418 newborn infants there were three cases of gonococcic ophthalmia among 1,703 receiving two drops of Sulmefrin solution in each eye at birth, one among 3,125 receiving one drop of 1% silver nitrate solution, and none among 1,570 receiving one application of 10% sodium sulfacetamide ointment. Among 2,020 infants receiving no prophylaxis at birth there were five cases of gonococcic ophthalmia. Mild chemical conjunctivitis was seen in most infants receiving 1% silver nitrate prophylaxis. This cleared within 48 hours, and no other sequelae were observed. Inclusion conjunctivitis occurred in each series and did not appear to be influenced by any of the prophylactics. All cases of this disease ran a benign course, and many cleared spontaneously without treatment. The intramuscular injection of penicillin into the mother during labor would seem to be the best prophylaxis of gonococcic ophthalmia in the infant, but the danger of hypersensitivity reactions prohibits routine use of this method. The same difficulty applies to treatment of the infant with intramuscularly administered penicillin. It is concluded that, although certain new areas of therapy, such as the use of prophylactic agents in ointment base, are worthy of study, the time-tested procedure of applying 1% silver nitrate solution to the conjunctival sac at birth is an efficient prophylactic against gonococcic ophthalmia.

Nephrosis and ACTH: Special Reference to Humoral Changes Observed in Four Cases. J. Meneghello R. and F. Monckeberg B. Rev. chil. pediat. 26:1-8 (Jan.) 1955 (In Spanish) [Santiago, Chile].

Four patients between the ages of 1 and 4 years with nephrosis of from two to six months' duration were observed. All patients had intense edema, anasarca, ascites, and marked albuminuria. The serum proteins were low with decreased albumins and increased alpha and beta globulins. The serum cholesterol was increased. Hematuria was found in three patients. ACTH was given intravenously in doses of 7 to 15 mg. at intervals of hours for about 10 days. In the course of treatment the intak of salt was restricted and penicillin or chloramphenicol wa administered. All patients responded with an abundant diuresi a great loss of body weight, complete disappearance of edem and albuminuria, absence of sodium retention in urine, elimin tion of sodium and potassium in the urine in normal ratio, co version of the changes of serum proteins into normal pattern and control of all the other humoral derangements and clinic symptoms of nephrosis. The complications observed include transient moderate uremia in all patients, moderate hypertensio in some, and hypertension with cardiac insufficiency that ma discontinuation of the treatment necessary in one patien Marked natremia occurred during intense diuresis in one patien and it was controlled by administration of sodium. Remissio lasted for three and six months, respectively, in two patien In the other two patients follow-up observations were not mad Although the response to the intravenous use of ACTH prompt and satisfactory, the treatment should not be used as routine. It is indicated for hospitalized patients and for patien who respond to the intramuscular treatment with a poor diures The treatment may be discontinued as soon as an abunda diuresis appears. The normalization of humoral changes aft ACTH diuresis observed by the authors suggests that ACT controls the hydrosaline imbalance that is the primary cause all humoral derangements and clinical symptoms of nephros

OPHTHALMOLOGY

Macular Holes in Retinal Separations: Their Significance a Their Surgery. A. H. Keeney. Am. J. Ophth. 39:648-653 (Ma 1955 [Chicago].

Macular holes are due to contusion or degeneration but either event cystic degenerative changes precede the typical ho formation. Simple, degenerative holes do not lead to retin separation. Proper retinal position is maintained in the presen of typical, punched-out lesions when: (1) the hole is a cyst wi an intact inner wall; (2) such a macular cyst has ruptured throu its inner wall only, thus leaving an intact outer wall; or (perimacular adhesions between the choroid and retina have be created by local inflammation. Macular holes are rarely t cause of retinal separation, in which case they must be comple holes. More commonly they are incomplete and incidental the pathogenesis of separation. When macular holes are inco plete they should not be subjected to operation with its attenda loss of valuable perimacular acuity. Sealing of complete macul breaks should be done with small, partial-penetrating electrod using low current, directed precisely to the edges of the hol

Hereditary Degeneration of the Macula Occurring in Five Ge erations. C. T. Davis and R. W. Hollenhorst. Am. J. Opht 39:637-643 (May) 1955 [Chicago].

Degeneration of the macula of each eye was discovered in persons in a kinship of 148 members, belonging to five gener tions. This family was discovered when two young women, year-old first cousins, presented themselves for examination the Mayo Clinic because of pregressive loss of visual acuity i each eye since early childhood. The visual defects in each these two young women were identical. As they were questione the existence of many similar visual defects among their kin wa disclosed. Since virtually the entire family resided in centra Wisconsin, it was possible to make a complete genetic study A macular lesion was responsible for the visual disability ob served among members of this family. The lesions found i the maculas of persons of about the same age were almos identical in appearance, and the patients' complaints were sim ilar. The age at onset of manifest visual disability varied from early childhood to adolescence. The lesions were progressiv and were symmetrical in each eye. A central scotoma wa responsible for the impairment of vision. Marked impairmen of color discrimination was associated with the lesions. Each patient had some degree of day blindness, but none had an associated cerebral lesion. The authors believe that the course of the disease, the appearance of the lesions ophthalmoscopically, and the other findings in the ocular examination place the disease in the group of heredofamilial degenerations of the macula without cerebral involvement; that is, Sorsby's macular dystrophy. The defect is transmitted as a dominant trait with complete penetrance.

Laboratory Observations on the Ocular Use of Tetracycline. J. W. Hallett, K. Naib and I. H. Leopold. Am. J. Ophth. **39**:691-696 (May) 1955 [Chicago].

It has been claimed that tetracycline, chlortetracycline, and oxytetracycline have the same broad-spectrum activity against gram-negative and gram-positive bacteria, certain viruses, and rickettsial infections. Solutions of tetracycline in 0.85% sodium chloride maintained their antibacterial activity undiminished after three weeks' storage at 5 C, whereas similar preparations of chlortetracycline and oxytetracycline commenced to deteriorate after from 24 hours to one week of storage. Furthermore tetracycline is said to diffuse readily into body tissues and fluids and to have low toxicity and a wide margin of safety. Since no reports were available on the ocular effects of tetracycline, studies were made on the eyes of rabbits. Summarizing the results of these studies, the authors say that aqueous levels theoretically effective against gram-positive organisms appear up to two hours after intravenous injections of 100 to 150 mg. in rabbits. Small corneal and smaller vitreous levels are found one hour after intravenous injection of 150 mg. The latter dose may, however, be nearly lethal. Subconjunctival injections of 10 mg. per cc. produce adequate corneal and aqueous levels up to four hours and vitreous levels up to one hour. The inflamed eye accepts the antibiotic in larger amounts than does the normal eye. Corneal bath or eye drops in concentrations of 25 mg. per cubic centimeter produce effective corneal levels for four hours. Aqueous levels are adequate up to two hours in the intact and up to four hours in the inflamed eye. Subconjunctival injections in concentrations up to 5 mg. per cubic centimeter are safe; eye drops in concentrations up to 25 mg. per cubic centimeter are harmless; corneal baths in concentrations up to 10 mg. per cubic centimeter are innocuous; and intracameral injections in concentrations greater than 1 mg. per cubic centimeter are dangerous.

Increase in Optic Nerve Lesions in Patients with Tuberculous Meningitis Being Treated with Isoniazid and Streptomycin. G. Janssen and W. Böke. Klin. Wchnschr. **33**:477-479 (May 15) 1955 (In German) [Berlin, Germany].

Studies on 245 children with tuberculous meningitis who were treated between 1948 and 1954 revealed that in those admitted for treatment since the introduction of isoniazid therapy in the second half of 1952, there was a definite increase in optic nerve lesions. Papillary changes taking the form of edematous swelling may correspond to choked disk or optic neuritis, differentiation being possible only by functional tests on the visual acuity and visual fields, which are rarely possible in a patient with severe meningitis, the less so if the patient is a child. When functional tests were possible, signs of optic neuritis were detected, and the temporal atrophies observed in several patients also suggested neuritic processes. Vascular lesions leading to prolonged ischemia may be brought on by perioptic meningitis or by optochiasmatic arachnitis, and rarely a miliary tubercle within the optic nerve may cause a papillitis. Estimates on the incidence of such lesions in tuberculous meningitis vary widely, but the authors believe that the increase in optic nerve lesions and the progression of these lesions to optic atrophy since 1952 must be due to a new factor. Since there is no evidence that the combination of isoniazid and streptomycin is particularly toxic, the authors believe that perhaps the giving of massive doses at the onset is responsible. For this reason they now dispense with the intrathecal administration of isoniazid at the onset, the more so, since with adequate oral doses, isoniazid is known to penetrate into the cerebrospinal fluid.

THERAPEUTICS

A New Antihistamine for Treatment of Various Allergic Manifestations. N. W. Clein. Ann. Allergy **13**:163-168 (March-April) 1955 [Minneapolis].

A new antihistamine, 1-methyl-4-amino-N′-phenyl-N′-(2′-thenyl)-piperidine tartrate (Sandostene), was given to 124 patients with hay fever due to pollen grass and other forms of allergy. The new drug was given alone and in combination with calcium, orally and intravenously, from May through August. All patients under 6 years of age were treated with the syrup of the antihistamine combined with calcium, and all patients over 6 were given the antihistamine in 25 mg. tablets. The average dose of the syrup was one teaspoonful three or four times a day. Two to four tablets daily were given depending on the age of the patient and the severity of the symptoms. One week the average dose was given, followed by one week of rest, and the third week the dose was doubled. Of the 124 patients, 76 had hay fever, 12 hay fever and asthma, 17 eczema, 8 perennial allergic rhinitis, 4 urticaria, and 7 angioneuritic edema with urticaria. The last seven patients were given intravenous injections of Sandostene combined with calcium in doses of 10 cc. The antihistamine was given only to those whose symptoms were not relieved by the grass pollen antigens and other treatment. A group of patients with similar symptoms was used as control. Of the 124 patients, 21 obtained excellent, 38 good, 35 fair, and 30 poor results. Two children had minor toxic manifestations. The best results were obtained in smaller children and in those whose symptoms were caused primarily by inhalants rather than foods. There were no cases of drowsiness, and the author was particularly impressed with the lack of undesirable side-effects. Since this new antihistamine is available in tablet form, in syrup, and in ampules containing the product combined with calcium, the form most suitable for each patient can be chosen. The combination with calcium in syrup and ampules results in a potentiation of the effect on cellular and vascular permeability. Although the new antihistamine, which appears to be more effective than others, is a valuable adjunct in the treatment of various allergic manifestations, specific allergic management is still of primary importance in the control of allergic disease.

The Question of Reactions to Mercurial Diuretics: A Reappraisal. E. A. Brown. Ann. Allergy **13**:131-159 (March-April) 1955 [Minneapolis].

The advent of the newer organic mercurial diuretics, given intramuscularly, subcutaneously, or orally, the increased caution in making dosage schedules, and the awareness of the implications of early minor undesirable side-effects have reduced the number of fatal reactions more than one would expect on the basis of idiosyncrasy to such commonly used drugs. In one clinic 13,000 injections of mercurial diuretics have been given in a four-year period, without any ill effects. One of the author's own patients received weekly injections for more than 10 years, with no adverse effects. When the physician is alert to problems of dosage in relation to the patient's age and weight, to water and electrolyte balance, to side-effects as evidenced by excessive diuresis, and to the possibility of allergic reactions, toxic effects due to large doses should easily be avoided. The small group of truly allergic patients can be recognized and treated with the proper precautions. The history will, if directed towards discovering "drug-reactors," help uncover those who require special handling. Treatment should always be initiated with small doses of 0.2 to 0.5 cc. Intradermal skin tests and patch tests, even on abraded skin, are not dependable. The injection of 0.05 cc. of serum from a patient taking the mercurial diuretic in question (and not sensitive to it) injected intradermally will often result in a wheal, if the recipient is sensitive to the drug. Since normal serum evokes a slight to moderate response, good technique must be used and the results interpreted qualitatively as well as quantitatively. A positive reaction to the test does not mean that the patient cannot tolerate with safety another mercurial diuretic, especially if the same precautions are followed. Choice of a diuretic agent may be directed to different classes of compounds, as well as to different drugs within each class. The routes of administration constitute another basis for choice. Mercurial diuretics are remarkably safe drugs when properly used. Such use, however, requires a recognition of the fact that the patient who needs them presents a dynamic system involving the interplay of a number of physiological and pathological processes, all of which must be taken into account for the maximum safety.

Treatment of Leukemia and Allied Disorders with 6-Mercaptopurine. J. R. Fountain. Brit. M. J. 1:1119-1124 (May 7) 1955 [London, England].

Of 26 patients with leukemia and allied diseases treated with 6-mercaptopurine, a purine antagonist, at the General Infirmary in Leeds, England, since June, 1953, 13 had acute leukemia, 7 chronic myeloid leukemia, 2 chronic lymphatic leukemia, 2 multiple myeloma, one mycosis fungoides, and one erythroderma secondary to an underlying reticulosis of undetermined type. The dose of the drug was based on that suggested by Burchenal, the initial dose being about 2.5 mg. per kilogram of body weight. Thus a 5-year-old child was started on 50 mg. and an adult on 150 to 200 mg. per day. The same dosage scheme was used both for patients with acute and those with chronic leukemia, and in all patients, the daily amount was divided in doses of 25 or 50 mg. given over 24 hours. Seven of the 13 patients with acute leukemia responded to the treatment: 5 had complete clinical and hematological remissions, and 2 had partial remissions. The remissions were only temporary, and resistance to further therapy with 6-mercaptopurine eventually resulted. Of the seven patients with chronic myeloid leukemia, one died of cerebral thrombosis a week after treatment was instituted. The other six patients showed a varying response, with increase in well-being, activity, appetite, and weight in four, and diminution in the size of the spleen and lymph nodes in five. The leukocyte count fell in all six patients, and erythropoiesis improved in two. One patient in the acute terminal phase had a remission lasting four and a half months. The two patients with chronic lymphatic leukemia, the two with multiple myeloma, and the patient with reticulosis of the skin did not respond to the treatment, but the patient who had mycosis fungoides obtained some improvement. Six-mercaptopurine is of low toxicity, and no serious complications followed its use. Whether patients who have a complete remission should receive a daily maintenance dose of 6-mercaptopurine remains to be answered, but from the author's limited observations it seems likely that maintenance therapy may not greatly prolong the remission. Continuous therapy seems essential in chronic myeloid leukemia if the beneficial effect of the drug is to be maintained. One of the patients was symptom-free and fully active for six months on a daily maintenance dose of 50 or 100 mg. In the absence of maintenance treatment a clinical and hematological relapse may follow the discontinuation of the drug within a month. With the knowledge that 4-aminopteroyl glutamic acid (aminopterin) and amethopterin, corticotropin and cortisone, and 6-mercaptopurine may all produce clinical and hematological remissions in acute leukemia, it seems desirable to give patients the advantage of such chemotherapy; sequential use of these drugs may offer several months of useful life. Although more patients with chronic myeloid leukemia must be treated before the ultimate value of 6-mercaptopurine is known, the initial observations suggest that it will have its place in the management of this disease.

Malarial Therapy in the Nephrotic Syndrome. O. G. Shaper. Brit. M. J. 1:1132-1135 (May 7) 1955 [London, England].

Four men and three women between the ages of 18 and 52 years with the nephrotic syndrome, i. e., with edema, proteinuria, and hypoalbuminemia, but without hypertension, nitrogen retention, or electrolytic disorder, and without an appreciable number of red blood cells in the urine, were given malaria therapy at the tropical disease center of the Sefton General Hospital, in Liverpool, England. The patients had failed to respond to more conservative forms of treatment. Six of the seven patients were infected with Plasmodium vivax by intravenous inoculation, and one patient was infected with Plasmodium ovale. The patients
were allowed to have as many chills as they were capabl
withstanding. Three of the seven nephrotic patients had a
nounced remission of symptoms for one year. The improven
in two other patients could not be associated with the mal
therapy. The last two patients died of their basic condition,
as they were both severely ill and the malarial paroxysms
poor or curtailed in number, it would be unfair to say
malaria therapy had failed. The satisfactory results obtaine
three patients encourage the continued use of malaria treatn
in nephrotic patients who do not respond to more conserva
treatment.

**Toxic Hepatosis with the Aspect of Intrahepatic Obstruc
Type Jaundice After Administration of Chlorpromazine (Lar
til), Atophan, Arsphenamine and Methyltestosterone.** C. M
and J. R. Rüttner. Schweiz. med. Wchnschr. 85:445-448 (Ma
1955 (In German) [Basel, Switzerland].

The occurrence of jaundice after the administration of ch
promazine (Largactil) is described in two psychotic women,
30 and 83 respectively. The total dose of chlorpromazine gi
to the first patient was 1.8 gm., and that given to the second
tient was 2.5 gm. The clinical aspect of the younger woman
responded with that of obstructive jaundice in three pati
reported on by Van Ommen and Brown (J. A. M. A. 157:
[Jan. 22] 1955). The 83-year-old patient died of pneumonia
cardiac decompensation and autopsy revealed cirrhosis of
liver associated with icterus. A toxic hepatosis resulted from
administration of chlorpromazine in the first patient, whil
the second patient cirrhosis of the liver was imminent but
not recognized when chlorpromazine was administered. The
currence of obstructive jaundice after the administration of o
drugs such as phenylquinoline carboxylic acid (Atophan-
chophen), arsphenamine, and methyltestosterone has been
ported in the literature. The various observations of chlor
mazine-induced icterus suggest caution in the administratior
the drug to psychiatric patients. Biliary stasis as a possible
toward reaction to the drug should not be considered harml
Evaluation of the degree of severity of the chlorpromaz
induced icterus should not be based on the result of the
tein flocculation or galactose tests, but on prothrombin ti
alkali phosphatase level, and cholesterol. The daily maximal d
of the drug should be reexamined by the psychiatrists.

**Serum Penicillin Concentration After Peroral Administrat
of Penicillin Combinations With and Without Probenecid.**
Lind and C. Trolle-Lassen. Ugeskr. læger 117:519-522 (A
28) 1955 (In Danish) [Copenhagen, Denmark].

The main investigations were carried out in well persons
two age groups, 20 to 25 and 68 to 78. It was found t
dibenzylethylendiamidinedipenicillin (DBED) by the mouth d
not offer any therapeutic advantage over ordinary benzyl pe
cillin. A certain therapeutic effect is ascribed to the high init
serum concentration of benzyl penicillin. Simultaneous pero
administration of these penicillin combinations and probene
gives a longer lasting therapeutic serum penicillin concentrati
than the administration of penicillin alone, so that oral admin
tration every eight hours seems to suffice. The older age gro
showed a higher and longer lasting serum penicillin concentrati
than the younger age group, which is explained by reduction
renal function due to age.

**A Year's Clinical Experience with Spiramycin in Infectious Di
eases.** A. Darbon and R. Crosnier. Presse méd. 63:681-683 (M
7) 1955 (In French) [Paris, France].

The new antibiotic, spiramycin, was recently extracted fro
Streptomyces ambofaciens. The authors used it on about 10
patients. Spiramycin has good therapeutic activity on gram
positive organisms. Its activity was as good as, and sometime
better than, that of the better-known antibiotics. It was excel
lently tolerated and was definitely superior in this respect to othe
antibiotics as far as oral administration was concerned. Onl

ne patient had a gastrointestinal reaction. The daily doses were f 2, 3, and sometimes 4 gm.; the 3-gm. dose appeared to be the est. There was a certain amount of disparity between the drug's tivity in vitro and in vivo. In two patients, spiramycin proved ore efficient than could have been expected, judging from boratory tests, and in a third, the drug's efficacy was disapinting compared to what was seen in vitro.

se of **Zetacillina in Surgical Infections.** M. Rubino. Clinica :221-223 (No. 4) 1954 (In Italian) [Bologna, Italy].

"Zetacillina," a drug in which penicillin is combined with a lfonamide, was used in the treatment of 27 patients with rgical infections. From 6 to 12 capsules, each containing ,000 units of penicillin and 0.25 gm. of the sulfonamide, were ven to the patients daily for varying lengths of time. The drug nefited most of the patients. The results were good in 20, ediocre in 5, and poor in 2. The use of this drug is contradicated in conditions in which the intestinal absorption is ered, in the immediate postoperative course, and in intestinal clusions, because in such instances therapy should be given the parenteral route.

ATHOLOGY

thology of Cerebral Palsy: II. Cerebral Palsy Due to Encephclastic Processes. A. Towbin. A. M. A. Arch. Path. 59:529-2 (May) 1955 [Chicago].

Twenty-three cases of cerebral palsy, derived mainly from population of the Columbus State School, Ohio, between 50 and 1954, were studied at autopsy by Towbin. Three basic thological types were evident in this group. Developmental fects of the brain accounted for the neurological disorder in patients who were reported on in a previous paper (abstracted, *A. M. A.* 158:888 [July 9] 1955). Of the other 17, antecedent stemic disorders, such as neonatal anoxia and erythroblastosis alis, were considered to be the mechanism of damage in 8; rebral palsy was caused by mechanical injury to the brain, drocephalus, and other intrinsic local defects of the brain in cases. Cerebral palsy is the result of a heterogeneous group of thological processes. The lesions of the brain in this disorder incurred during fetal and infantile life; in most cases the ramidal or extrapyramidal system is involved. Only by corlating clinical observations with the findings in the brain at topsy can a comprehensive appraisal of the processes in cereal palsy be obtained. Further resolution of the problem of usation in cerebral palsy is of immediate importance as a quisite to the successful pursuit of prophylaxis and treatment. is increasingly evident that cerebral palsy in a significant prortion of cases is related to systemic disorders of the fetus and fant. Consequently, the problem of cerebral palsy becomes creasingly the province of the general pathologist.

ntibody Production by Spleen in Vitro: I. Influence of Cortine and Other Chemicals: II. Correlation of Weight of Rabbit, eight of Spleen, and Level of Antibody Produced in Vitro. M. Mountain. J. Immunol. 74:270-277 and 278-280 (April) 55 [Baltimore].

The production of H-agglutinin in vitro by spleen taken from bbits immunized with typhoid vaccine was studied. Spleens moved from the animals four days after a single intravenous jection of vaccine were minced, and a culture of minced spleen rved as the basis for the author's test system. Antibody production in culture continued for at least three days. The reproucibility of the test system was evaluated statistically in order assay the effect of the addition of various inorganic and rganic chemicals, including vitamins and hormones, on antiody production. Antibody formation in vitro required oxygen nd was suppressed by sodium cyanide in final concentrations of rom 10^{-2}M to 10^{-4}M, and by salts of the heavy metals at inimal concentrations indicated: manganous sulfate 10^{-3}M, erric chloride 10^{-2}M, and cupric sulfate 10^{-4}M. Antibody formation in vitro was also suppressed in the presence of 100 mM. sucrose, by the "essential" amino acids at 30 mM. (combined total concentration) and by the reducing substances: reduced glutathione in a concentration as low as 15 mM., cysteine in a concentration of 15 mM. or lower, ascorbic acid in a concentration of 15 mM. or lower, as well as by cortisone in a concentration of 32 mg. per 100 cc. or more. With the exception of glutathione, and possibly sucrose, none of these substances, at concentrations that were found to be inhibiting, altered the antibody titer when incubated with immune serum. Thus the various chemicals inhibited some phase of antibody formation by surviving cells in culture rather than by destruction of antibody once formed. Eleven rabbits of weights varying from 3 to 6 kg. were each given a single intravenous injection of typhoid vaccine. Four days later the rabbits were bled from the heart with the aid of pentobarbital anesthesia and the entire spleen was removed. The weight of the spleen and the weight of the rabbit showed a positive correlation. Furthermore the weight of the spleen, as well as the weight of the rabbit, showed a positive correlation with an index of the antibody-forming capacity of a given mass of the spleen in vitro. These results indicate that in selecting animals for study of antibody production in vitro not only will a heavier spleen be obtained from a larger animal but a given fragment of such an antibody-producing tissue can be expected to give a higher yield of antibody. The observed correlation between the size of the spleen and its capacity (per unit weight) to produce antibody introduces a new parameter for the study of the cells responsible for antibody production.

RADIOLOGY

Physiological Aspects of the Tumoral Circulation Proper in Ten Cases of Glioblastoma Multiforme. V. A. Fasano and G. Broggi. Minerva chir. 10:215-219 (March 15) 1955 (In Italian) [Turin, Italy].

Ten patients with glioblastoma multiforme were studied by angiography. In most of these patients the angiograms revealed a direct arteriovenous communication. The presence of a neoplasm, through which these communications were seen, modified the cerebral hemodynamics. The result was slackening of the cerebral circulation, the extent of which depended on the morphological aspect of the neoplastic vascular network. This altered circulation became more evident on the angiograms that showed the circulation within the neoplasm. In some of these patients the angiograms failed to demonstrate a vascular system within the glioblastoma. Histological studies of the removed tumors seemed to indicate that this failure occurs more frequently in patients in whom such changes as hemorrhage, necrosis, vascular proliferation, or cysts are present within the neoplastic tissue.

New Agents for Cholecystangiography (Telepaque, Biligrafin). T. Denstad. Tidsskr. norske lægefor. 75:259-263 (April 15) 1955 (In Norwegian) [Oslo, Norway].

The new agents for cholecystography, Telepaque for peroral use and Biligrafin for intravenous use, have been tested in Aker Hospital for about a year. They contain three atoms of iodine in the molecule, give a denser gallbladder shadow, and allow roentgenologic presentation of the bile ducts. With Telepaque this depends on a functioning gallbladder that can concentrate the bile containing the contrast medium, but the bile ducts can be filled with the contrast medium even though the gallbladder has been removed or its concentration ability is reduced (cholecystitis) if Biligrafin is used. Besides the detection of stones in the common bile duct study of the bile duct dyskinesias is made possible. For examination especially of the bile ducts Biligrafin should be applied, while Telepaque affords better information about the condition of the gallbladder. Side-effects are few. Grave liver affection, marked jaundice (but not slight jaundice), acute nephritis, uremia, and gastrointestinal disturbances are contraindications.

RINGWORM

To the Editor:—*A family recently acquired a cat; it also had a dog. Subsequently the family developed ringworm of the body; three of the children also had a small spot or two on the scalp. The dermatologist diagnosed the children's ringworm as due to Microsporum audouini. He x-ray-epilated two of the children; this was followed by local treatment. Later animal ringworm M. canis was recovered by culture from the cat and the dog and all the lesions on the children. 1. Can the difference in the two types be told by the amount of fluorescence under Wood's light? 2. Should patients with scalp involvement caused by animal ringworm of the scalp be epilated, or should more conservative treatment be tried first? 3. Is animal ringworm of the scalp more easily cured than the usual type due to M. audouini? None of these lesions was of the kerion type. Please indicate treatment for both types of ringworm on the scalp and on the body.*

Douglas P. Arnold, M.D., Buffalo.

Answer.—1. No. 2. Conservative treatment should be tried first. 3. Yes. Apply 5% salicylanilide in a "greaseless" base daily, shampoo frequently; under Wood's light, at frequent intervals, epilate the diseased hairs with a forceps and have the youngster wear a cap constantly. If there is no progress after a reasonable period of time (two to three months), the hairs should be epilated by x-rays by somebody trained in the technique. This routine may be used for either type of ringworm of the scalp. The body types usually respond to treatment with benzoic and salicylic acid (Whitfield's) ointment diluted to one-eighth to one-fourth strength and applied several times daily.

CHEST PAIN AND TIC DOULOUREUX

To the Editor:—*A woman 59 years old weighing 140 lb. (63.5 kg.) has always had good health except some sinusitis and an attack of tic douloureux eight years ago, which was fairly well controlled for three years by injections. Finally she was operated on for the condition, with satisfactory results. Shortly after the operation she began to have pains in the left side of the chest. They were trigger pains, which became more painful, and were only relieved by intercostal nerve root injection (during the injection an accident occurred, a collapse of the left lung); the pain was relieved, however. During the past two weeks she is suffering recurrence of the chest pain with more frequency and intensity. Every classical symptom of tic douloureux is present—only the intercostal nerves on the left side, the 4th and 5th nerves as near as I can determine—are involved. It is impossible to adequately examine the area because of starting the pain. Please give information on treatment for the condition.*

J. W. Wentz, M.D., Pataskala, Ohio.

Answer.—Major neuralgia of the type that occurs in the trigeminal and glossopharyngeal nerves (trigeminal neuralgia and glossopharyngeal neuralgia) does not occur in any other nerves in the body. The intercostal neuralgia that is described here must have some other explanation. The nerve may be involved by a tumor, by a herniated intervertebral disk, by an arthritic spur, or by some other condition, such as a previous herpes zoster. Without knowing the cause for the condition in this case, it would not be possible to recommend treatment. The first indication is a thoroughgoing investigation and diagnosis.

ATROPHIC RHINITIS

To the Editor:—*What can be done for a woman over 50 years of age who has a gradual loss of sense of smell, with no antecedent disease except for a dry nose?* *M.D., Illinois.*

Answer.—A patient over the age of 50 who has had a dry nose is probably suffering from atrophic rhinitis. This condition is characterized by an atrophy of the mucous membrane of the nose, including the mucus-producing glands. The symptoms vary from a mildly dry nose to a severe crusting and foul-smelling condition. There is an associated atrophy of the olfactory mucosa including the glands of Bowman, which produce a secretion into which the odoriferous particles are normally imbedded in the process of olfaction. There is no known curative treatment for atrophic rhinitis or the associated anosmia. For the common nasal preparations used for symptomatic relief of atrophic rhinitis the reader may refer to any of the common textbooks of otolaryngology.

BISMUTH SUBNITRATE

To the Editor:—*Is there any clinical evidence that bismuth subnitrate in ointment form applied topically to the skin is absorbed through the intact skin and might cause nitrous oxide poisoning?*

M.D., Pennsylvania.

Answer.—No; nor is such a reaction likely to occur because the subnitrate radical, if it converts, would probably convert in the direction of a nitrite. Nitrite poisoning has been reported from high doses of bismuth nitrate administered orally—doses of 30 to 60 gm. within a 24 hour period; it is inconceivable that such an amount could be absorbed from an ointment.

DEATHS FROM ANTIBIOTICS

To the Editor:—*In an inquiry on "Differentiation Between Viral and Bacterial Respiratory Infection" in* The Journal *on May 21, 1955, page 239, one question raised was: "What is the actual number of deaths reported as directly or indirectly attributable to antibiotics in general and to penicillin in particular?" I would like to comment on this question. A recent search of the literature revealed a total of 48 anaphylactic deaths reported from penicillin and 34 deaths from aplastic anemia following chloramphenicol administration (Hussar, A. E., and Holley, H. L.: Antibiotics and Antibiotic Therapy, New York, the Macmillan Company, 1954). Fatalities reported from micrococcic (staphylococcic) enteritis, fungal or other superinfections, periarteritis nodosa, renal toxicity, intrathecal administration, and other causes have not been counted but may be roughly estimated at about 100 cases. These figures, however, do not represent the true incidence of fatal antibiotic reactions, since a considerable number of cases remain unreported. I know of at least six antibiotic fatalities that were never reported. Certainly, many other physicians have similar knowledge. It is a fair estimate then, that probably several hundred persons have died from antibiotic administration. True, this incidence is a very small percentage of the total number who have received antibiotics. However, it would be erroneous to minimize the charge of promiscuity in the use of a therapeutic agent solely because of the low percentage of fatal reactions. No matter how small the statistical figures, they became 100% for those physicians who lost their own children through such accidents. When dealing with human lives, even small risks have to be taken with great caution and, therefore, the risk of antibiotic administration must be well balanced by a justifiable indication for such medication. Peculiarly enough, accidents often hit when unjustified risks are taken. An analysis that I have made of the reported fatalities has revealed that about one-half of these individuals died from unnecessary antibiotic medication.*

The indiscriminate use of antibiotics should be condemned not only because of untoward drug reactions, but also for many other reasons, among which two should weigh heavily: the threat to the future usefulness of present-day antibiotics and the threat to our professional standards.

Allen E. Hussar, M.D.
Veterans Administration Hospital
Montrose, New York.

CANKER SORES

To the Editor:—*I have read with great interest the various letters in Queries and Minor Notes dealing with treatment of canker sores. About a year ago I was privileged to try a new germicide called Clorpactin WCS-90, which is a brand of monoxychlorosene. I have had success in treating 19 cases of canker sores locally with this powerful and apparently nontoxic germicide. A paper on my experiences and results with Clorpactin WCS-90 will be published in the August, 1955, issue of the A. M. A.* Archives of Otolaryngology.

Martin H. Zwerling, M.D.
375 E. Main St.
Bay Shore, N. Y.

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TRANSHEPATIC VENOUS CATHETERIZATION AND VENOGRAPHY

Howard R. Bierman, M.D., Keith H. Kelly, M.D., Laurens P. White, M.D., Alexander Coblentz, M.D.
and
Arthur Fisher, M.D., Duarte, Calif.

The portal venous system has generally been considered inaccessible except at laparotomy. During investigations in man on the relationship of the spleen and the liver in the dynamic physiology of the circulating formed elements of the blood, it became desirable to obtain blood repeatedly from the portal vein during relatively long periods of time. The procedure of direct transhepatic portal venipuncture was conceived in 1951 as a relatively simple clinical method of obtaining portal venous blood for this purpose.[1] The original description of the procedure on 14 patients was preliminary in nature and merely recorded the feasibility for short-term sampling. This report describes an improved technique for transhepatic venipuncture and catheterization of the portal and hepatic veins that has evolved from the experience gained during 144 transhepatic venipunctures performed on 73 patients during the past two years.

MATERIALS AND METHODS

Anatomic Considerations.—The portal vein in the normal adult is about 7 to 8 cm. in length, extending from the level of L-2 to L-3 to the porta hepatis at the junction of L-1 and T-12. Just before the portal vein enters the liver, it divides into a right and left branch supplying the respective lobes.[2] The shorter and thicker right branch of the portal vein divides again shortly after its origin and then subsequently develops extensive ramifications to supply the larger right lobe, which comprises about 60% of the entire liver tissue. The branching of these radicles in the normal liver is of great regularity. The division of the portal vein usually takes place at the level of T-12 in the transverse plane. Most of the branching occurs within a 3 cm. stratum in the anteroposterior dimension and is inclined cephalad to the left at an angle of 15 to 20 degrees, roughly parallel with the lower edge of the anterior border of the liver.[3]

Serial cross sections of the liver in the transverse plane revealed that the largest and most accessible ramifications of the portal vein were slightly above the initial division of the portal vein within an arc of 20 to 40 degrees from the linea alba at the skin surface at the level of T-12 (fig. 1). The introduction of a needle to a depth of 6 to 12 cm. could be reasonably expected to enter one of the major portal radicles if directed within the area described. Since the inferior vena cava lies at a depth of 15 cm. and the major tributaries of the hepatic vein are most often encountered at the level of T-8 to T-10, these structures are avoided if the following technique is employed.

Procedure.—With the use of routine sterile precautions, the portal venipuncture may be done at the bedside or on the x-ray table if venograms are desired. For the patient without an easily palpable liver, a semi-Fowler's position (15-20 degrees) is preferred. In the patient with a liver of approximately normal size, a point 1 cm. below the xiphoid process and 1 cm. to the right of the midline is anesthetized with the injection of 2% procaine hydrochloride deep to and including the parietal peritoneum. The introduction of a few cubic centimeters of procaine over the surface of the liver has produced as much analgesia at the site as has direct injection of the liver capsule or parenchyma. The portal venipuncture needle is then passed through the skin and parietal peritoneum until it reaches the surface of the liver. The needle is poised for a moment while the proper angle of introduction is confirmed. The patient is then asked to take a moderately deep breath and hold it. The needle is advanced rapidly and firmly to the 12 cm. marker, maintaining the selected angle. The needle is released, and the patient is permitted to breathe. The hub of the needle will move in a manner paradoxical to the inspiratory and expiratory excursions of the liver. Fixing the proximal end of the needle firmly while the patient is breathing

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From the Division of Research and the departments of internal medicine and radiology, City of Hope Medical Center. Now at National Cancer Institute, Bethesda, Md. (Dr. White).

Part of this study was done under the auspices of the National Cancer Institute, Public Health Service, at the Laboratory of Experimental Oncology, Cancer Research Institute, University of California School of Medicine, San Francisco.

The portal venipuncture needle described was developed by and may be obtained from Becton-Dickinson & Company, Rutherford, N. J.

1. Bierman, H. R.; Steinbach, H. L.; White, L. P., and Kelly, K. H.: Portal Venipuncture: A Percutaneous, Trans-Hepatic Approach, Proc. Soc. Exper. Biol. & Med. 79: 550-552, 1952.

2. Morris, H.: Human Anatomy: A Complete Systemic Treatise, edited by J. P. Schaeffer, ed. 10, Philadelphia, Blakiston Company, 1942. Gilfillan, R. S.: Anatomic Study of the Portal Vein and Its Main Branches, Arch. Surg. 61: 449-461 (Sept.) 1950.

3. Eycleshymer, A. C., and Schoemaker, D. M.: A Cross-Section Anatomy, New York, Appleton-Century-Crofts, Inc., 1938.

deeply increases the hazard of tearing the liver parenchyma. The patient should be cautioned to breathe in a shallow fashion during the remainder of the procedure.

The obturator is removed and gentle aspiration applied as the needle is slowly withdrawn. When the distal opening of the needle lies within a vessel, blood will flow freely into the syringe, although variations due to inspiration and expiration may be expected depending on the venous pressures encountered. The needle should be rotated 360 degrees to determine the position of optimal flow, after which the sliding marker-guard should be adjusted to the skin surface to maintain the exact position of the needle. If the needle is aimed 5 to 10 degrees superiorly from the horizontal, the radicles of the hepatic vein may be entered at the 10 cm. depth. If the needle is introduced to the 15 cm. depth in the true transverse plane, less than 10 degrees from the midline to the right, the inferior vena cava may be entered. In those patients who have hepatomegaly or in whom the liver is depressed inferiorly, the landmarks must be revised. The porta hepatis is displaced inferiorly as the liver enlarges. The optimal site for portal venipuncture similarly moves downward.

A special needle has been devised for portal venipuncture; a no. 16 to no. 18 needle, 15 cm. long, with a distal side opening and tight-fitting obturator has been found most effective. This needle is preferred because of its single cutting edge and directional opening. The proximal end of the needle has a recessed hub so that clotting is minimized. The bore of the needle also fits into the end of a Luer-Lok syringe, and the obturator handle and needle are notched, indicating the direction of the distal opening. The needle may thus be rotated 360 degrees to relieve an obstruction. A sliding guard is also provided to facilitate measuring and maintaining the proper length of the needle during and after the insertion of the needle into the liver.

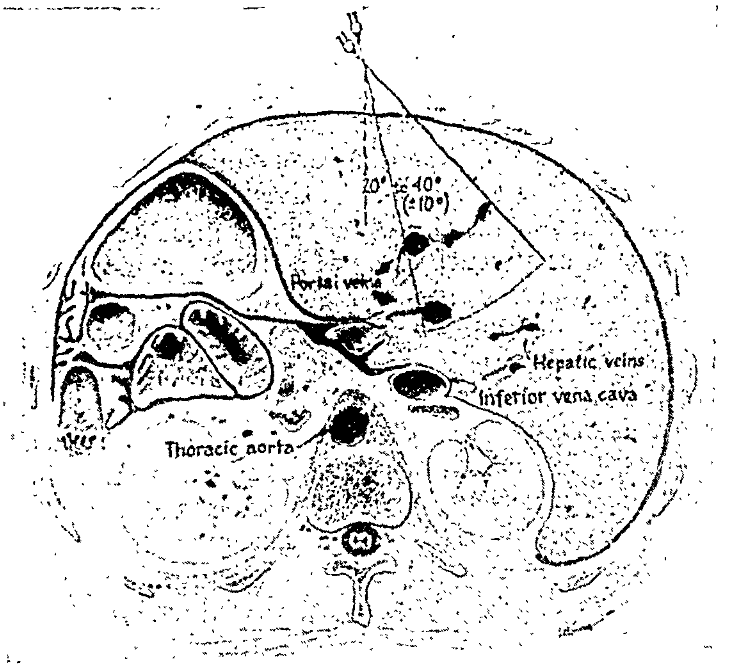

Fig. 1.—Transverse cross section of body at level of 12th thoracic vertebra. Note that the major divisions of the portal vein are contained within a 20 to 40 degree wedge at a depth of 6 to 12 cm. from skin surface.

Catheterization.—Since one of the major goals of this investigation was to obtain portal blood samples repeatedly over prolonged periods, catheterization of the portal vein via the venipuncture needle was developed. A small ureteral catheter or hardened polyethylene tubing is threaded through the needle into a branch of the portal vein as the needle is withdrawn, leaving the tubing in place in the vessel for future sampling. The tubing should be at least three times the length of the needle to allow the needle to be withdrawn over the tubing simultaneously with the feeding of the tubing into the needle to maintain the position of the tubing in the vessel. The unidirectional opening of the venipuncture needle facilitates the passage of the tubing into the vein without abutting on the vessel wall. Venography should precede and follow the withdrawal of the needle to confirm the location and direction of the tubing in the vessel. The polyethylene catheters have been left in place for 2 to 19 days without sequelae.

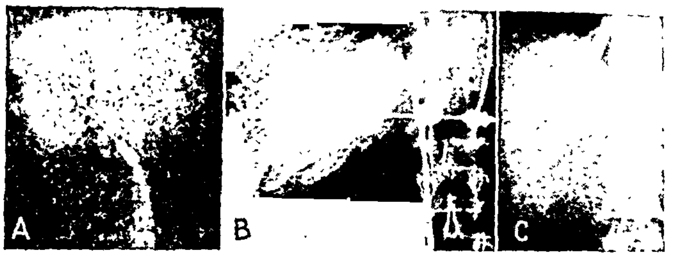

Fig. 2.—*A*, portal venogram with good filling of both lobes of liver. *B*, portal venogram of right lobe of liver. Catheter from below is in the inferior vena cava, with tip resting in hepatic vein. The catheter from above is in descending aorta, with the tip in hepatic artery. *C*, filling of hepatic vein by direct venipuncture.

For portal venography, 20 to 50 cc. of concentrated contrast medium is injected forcibly with the directional needle opening aimed retrograde toward the main portal vein. Sodium acetrizoate (Urokon) 70%, iodopyracet (Diodrast) 70%, or sodium iodomethamate (Neo-Iopax) 70%, have been employed satisfactorily and afford better contrast than can be obtained with 30% concentration. In this manner the major portion of the portal circulation may be demonstrated. Venograms via the needle afford more contrast than with the small-bore catheter or tubing.

RESULTS

One hundred forty-four transhepatic venipunctures were attempted in 73 patients. Portal venous blood was obtained in all but nine patients; in one patient with neurofibromatosis portal blood was not obtained despite five separate trials. Fourteen patients were catheterized via the portal or hepatic venipuncture needle, and the tubing was left in place for 2 to 19 days without sequelae. In three patients both the hepatic and the portal veins were catheterized by the transhepatic approach without untoward reaction. Portal venous blood clots so rapidly that heparin sodium in isotonic sodium chloride solution should be employed to maintain the patency of the needle or the catheter. The caliber of the polyethylene tubing is small, and it may require one to two minutes to obtain 3 to 5 cc. of blood. Drawing blood directly through a large-bore needle or tubing is recommended for rapid sampling.

Venograms were obtained in all patients to confirm the position of the needle or catheter. The vascular pattern of the portal vein as demonstrated by this technique was anatomically characteristic (fig. 2*A* and *B*). The splenic vein was also outlined when the contrast medium was rapidly introduced under pressure. In 13 instances the hepatic vein was visualized via direct venipuncture (fig. 2*C*). In three instances the inferior vena cava was similarly demonstrated. Hepatic arteriograms and portal venograms in the same patient on five occasions permitted accurate comparisons between the arterial and portal venous supply of the liver[4] (fig. 3*A* and *B*). Definite areas of tumor involvement were suggested by vascular distortion, and in many instances there were areas devoid of venous circulation that corresponded to metastatic nodules.

The hydrostatic pressure within the portal vein was estimated by the level of portal blood that rose in the needle and rarely exceeded 10 cm. above the right auricle in those patients without cirrhosis. In two patients with cirrhosis the portal venous pressure exceeded 20 cm. H_2O, and blood surged freely and spontaneously from the needle. Increases in intra-abdominal pressure (Valsalva's maneuver, vomiting) caused prompt and marked increases in portal venous pressure. Portal venograms in these two patients with cirrhosis showed a markedly constricted group of vessels limited to a small area of the liver[5] (fig. 3*C* and *D*).

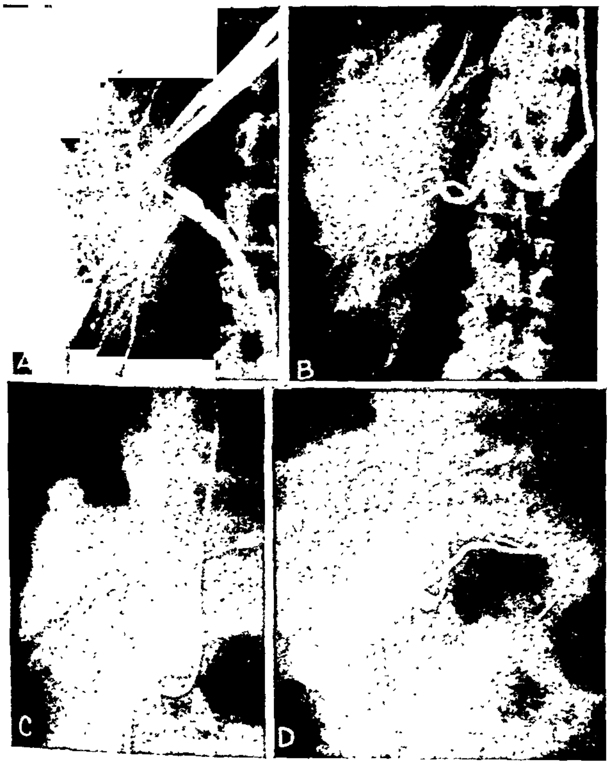

Fig. 3.—*A*, right superior branch of portal vein in a patient with Hodgkin's disease and hepatomegaly. Radiopaque catheter from above is in hepatic vein. *B*, hepatic arteriogram in same patient for comparison. Note relative decrease in arterial circulation, with areas of increased opacification. *C*, portal venogram with restricted visualization in patient with portal cirrhosis. *D*, hepatic arteriogram in same patient showing relative avascular pattern.

Blood from the portal vein was found to have a higher oxygen content than that obtained from the hepatic vein or the inferior cava and accordingly appeared more red than nonportal venous blood yet not as bright as arterial blood.[6] While the bright color suggested portal blood, it was not certain identification in all instances, as shown by venography. The glucose content of portal venous blood was determined after the oral ingestion of glucose. The increase in glucose content of the portal vein preceded and exceeded that in the arterial or venous blood from other sites. The bromsulphalein content of portal venous blood was found to be lower to a variable degree than that of the arterial blood. No significant differences were found in the portal venous content of protein, urea, sodium, potassium, chloride, calcium, or phosphorus when compared with blood simultaneously drawn from the hepatic vein, hepatic artery, or peripheral vessels. Occasionally marked differences were found in the leukocyte and platelet levels of the portal venous blood as compared with arterial or hepatic venous blood. The significance of these data remains unexplained.

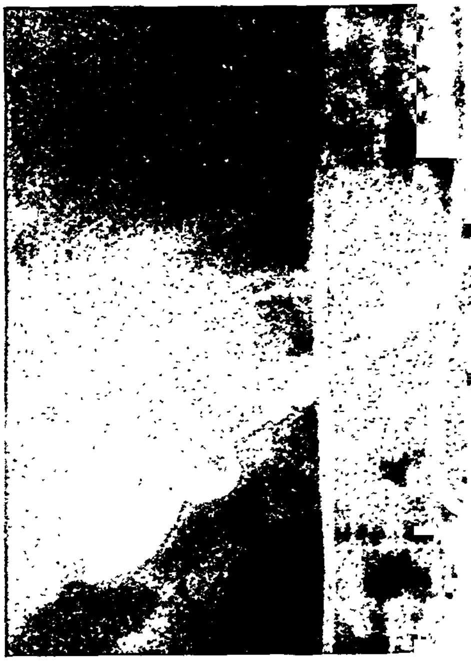

Fig. 4.—Direct transhepatic puncture of gallbladder demonstrating a persistent small defect in opacification presumably due to a stone.

Since many of the patients studied had widespread neoplastic diseases, it was possible to follow most of them until their death. Postmortem examinations were obtained in 55 of 62 patients (89%). Two patients were lost to follow-up. There were no serious complications attributable to the procedure. Several unexpected findings were encountered. Arterial blood was obtained in two patients, intestinal contents were aspirated in three patients, and in two patients concentrated bile was obtained. In one patient, the gallbladder was visualized by direct puncture, and a small defect, presumably a stone, was revealed (fig. 4). In the other patient, the cystic duct was entered and catheterized. In all instances the needle was withdrawn without sequelae. Evidence of bleeding after the venipuncture was found in three cases at postmortem; in one, a 2 cm. hematoma was found within the liver, and, in another, a 10 cm. hematoma was discovered on the surface of the liver. Death in neither case could be attributed to bleeding. In the third case, a 52-year-old man with advanced carcinoma of the lung with hepatic metastases and thrombocytopenia, 300 cc. of sanguineous ascitic fluid was found in the peritoneal cavity. Examination of the liver revealed the track of the needle had perforated through the undersurface of the liver at the anterior-inferior margin. Extravasation of iodopyracet into the liver parenchyma and beneath the capsule in the remaining patient was associated with transient syncope without sequelae. In some instances there was a small amount of extravasation of contrast material about the needle-end. This apparently caused no difficulty and was not visualized on repeat films taken 1 to 24 hours later. Portal venograms via the polyethylene tubing are difficult because of the small bore (fig. 5).

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[4] Bierman, H. R.; Byron, R. L., Jr.; Kelly, K. H., and Grady, A.: Studies on the Blood Supply of Tumors in Man: III. Vascular Patterns of the Liver by Hepatic Arteriography in Vivo, J. Nat. Cancer Inst. **12**: 107-117, 1951.

[5] Daniel, P. M.; Prichard, M. M. L., and Reynell, P. C.: The Portal Circulation in Experimental Cirrhosis of the Liver, J. Path. & Bact. **64**: 53-60, 1952.

[6] Bierman, H. R.; White, L. P.; Kelly, K. H., and Steinbach, H. L.: Biochemical and Hematologic Characteristics of Blood from the Hepatic Portal Vein in Man, J. Appl. Physiol. **5**: 567-576, 1953.

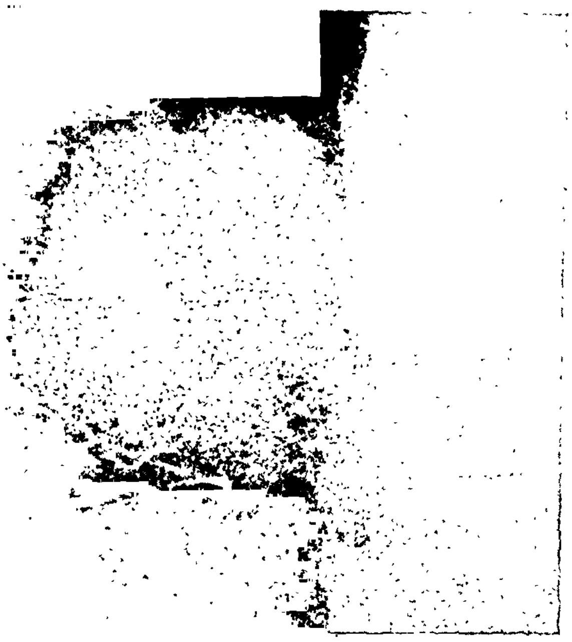

Fig. 5.—Visualization of a portal vein sampling site by radiopaque dye infusion via an indwelling polyethylene catheter. Catheter has been coiled over the abdominal wall for demonstrative purposes. Another polyethylene tubing has been placed in the hepatic vein with use of the transhepatic technique as for portal vein intubation.

COMMENT

The direct access to the portal vein by transcutaneous-hepatic puncture has permitted observations in man that have definite clinical value. The normal portal venous pressure fluctuates with the usual respiratory excursions, rarely exceeding 10 cm. Elevations in portal venous pressures up to 22 cm. H_2O were observed in patients with portal cirrhosis or intrahepatic portal obstruction and during Valsalva's maneuver or the act of vomiting. In the two patients in whom a branch of the hepatic artery was entered, the pressure coincided with the brachial artery pressure recorded by the cuff method. The measurement of the portal venous pressure by direct venipuncture appears to offer a simple and accurate method for determining portal hypertension and, together with a liver biopsy, may permit a more dynamic study of the alterations that occur in the development of portal cirrhosis. Although portal blood is usually a brighter red than peripheral or hepatic venous blood, a venogram is necessary to identify the site of the blood sample. In this manner the hepatic vein and inferior vena cava ca be excluded and catheterization or direct sampling fron the portal vein can be undertaken with assurance.

The venograms of the intrahepatic portal circulatio have demonstrated patterns that occur regularly unde specific conditions. The venogram in the noninvolve liver shows an orderly branching that closely resembl the normal anatomic configuration (fig. 2*A* and *B*). I the liver containing metastases, the large portal branche are sharply diverted around large areas devoid of venou vascularity and exhibiting many bizarre, nonuniform va cular patterns that are not seen in the normal liver. It ha been shown in many instances that hepatic metastases a generously supplied by the hepatic artery, far beyon anticipation.[4] It cannot be stated with certainty th hepatic metastases are not supplied by portal venou blood in all types of tumors. That there is relatively le venous circulation in and immediately about the met static area than occurs in the noninvolved areas, howeve appears to be demonstrable. The superimposition of va cular patterns at different levels throughout the liv tends to obscure many areas of small metastases appea ing in an area without venous circulation, particular since the films are exposed in a single plane, usual anteroposteriorly. Further elaboration of the relationsh of the venous blood supply of intrahepatic tumors w require meticulous comparison of the venograms with t injected specimens.

In the two cases of portal cirrhosis, the venogra showed an orderly but contracted vessel pattern restrict to a small area of the liver. Daniel and co-worker found a similar restricted venous circulation in rats wi cirrhosis.

SUMMARY

In 144 transhepatic portal venipunctures, perform in 73 seriously ill patients, no serious complications we encountered, although gastrointestinal contents were a pirated on three occasions and hepatic arterial blood w obtained twice. The portal circulation may be radiolog cally demonstrated by the injection of radiopaque med ums directly into the portal vein. For various studie serial samples may be obtained over prolonged periods l catheterization of the portal vein. The experience gain with this technique over the past two years indicates th portal venipuncture may be employed safely as a valuab clinical and investigative aid.

1500 E. Duarte Rd. (Dr. Bierman).

Hazard of Tinted Automobile Windshields.—Tinted optic media, particularly the darker brands of tinted windshield contribute significantly to the hazard in nightdriving, particular under conditions of low luminances and, consequently, sma visibility distances caused by poorly reflecting targets and bac grounds. Similarly dangerous reductions in visibility distanc were obtained . . . for twilight conditions, that is, when th driver has not yet turned on his headlamps. . . . Furthermor because of their relatively high transmittance, the effectivene of tinted windshields as a protection against glare during th day is negligible. Thus, their only advantage seems to be the ability to absorb radiant heat. . . . The best compromise appea to be the use of dark sunglasses for glare protection during th day, and clear windshields of the highest attainable transmi tance.—H. Haber, Safety Hazard of Tinted Automobile Wind shields at Night, *Journal of the Optical Society of Americ* June, 1955.

TOTAL REHABILITATION OF THE RHEUMATOID ARTHRITIC CRIPPLE

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and
Howard A. Rusk, M.D., New York

Among the great numbers of severely disabled pers in our society, the plight of the person with chronic umatoid arthritis has been like that of no other. Beby a chronically progressive process, he has suffered n and crippling from a disease that has not had the rcy to kill but only the virulence to disable and wreck human body. Variously it has been estimated that to 25% of all patients developing rheumatoid arthritis l into this pattern of progressive disability and inidism.

Statistics concerning the extent of rheumatic disease the United States are at best inaccurate indexes. The vey reported by the United States Public Health Serv-[1] in 1938 is probably the most familiar; at that time was estimated that nearly 7 million persons in the ited States were suffering from some type of rheutic disease. More recently, in 1952, Woolsey [2] of the ited States Public Health Service reported results m a similar survey conducted among 25,000 houseds in 68 sample areas of 42 states. His findings製orated those of the earlier sampling. On the basis his sample group he estimated that in 1951 approxitely 10,104,000 persons beyond the age of 14 years, luding persons with rheumatic fever and rheumatic rt disease, indicated that they were afflicted with umatism. Of this group, 6,414,900 had had such a gnosis confirmed by their physicians. In addition, ause of their arthritis, approximately 2,500,000 had d to make some change in the type or amount of work t they had been carrying on.

The socioeconomic significance of this situation is dily apparent. With a disease of such magnitude possing a low potential for killing and a high potential disabling, it is not surprising to find that it leads all er diseases in crippling and in economic loss. In the ited States alone, more than 92 million man days per ar are lost because of rheumatism, with an annual nomic loss of 0.25 billion dollars.[3] In England rheutism accounts for 16.67% of all industrial disability d 6.25% of pensionable invalidism.[4]

Since these statistics are for rheumatic diseases in neral one can only interpolate in an effort to arrive some index for the incidence of rheumatoid arthritis. asmuch as 25 to 30% of patients routinely seen in a neral arthritis clinic have rheumatoid arthritis, one ight assume this to be a reasonable means for deducn. Regardless, the widespread incidence of rheumaid arthritis and of arthritic cripples is a well-established ct both in one's professional and often in one's private e.

PROBLEM

In the past, rehabilitation of the person with chronic rheumatoid arthritis was a tenuous undertaking so long as the disease process was an active and painful one; not only was the physical exertion inherent in rehabilitation poorly tolerated by the patient but the risk of accelerating the underlying process was a real one. By and large, therefore, rehabilitation was restricted to those chronic cripples in whom the disease process was quiescent or burned out.

Since the advent of cortisone, corticotropin, and other newer measures for controlling the inflammatory arthritic process, there has been an upsurge of hope and a resultant clamor among patients with chronic rheumatoid arthritis for a combined drug and rehabilitation program. The feasibility of this has been seriously questioned in many quarters, and relatively few patients have been accepted for such combined treatment programs. The major objection, it would seem, has been the dichotomous nature of adrenal oxysteroids in producing undesirable physiological effects aside from their desired anti-inflammatory effect; the more conservative regard for this two-edged situation that has developed among clinicians in the past four years and the consequent wariness under the circumstances for undertaking indefinite hormone therapy with such a patient are the factors that have been most decisive against such an approach. We have not been in agreement with this negative attitude.

In an effort to clarify the problem, we undertook an informal study three years ago of a pilot group of patients. These were all active, severely crippled persons with rheumatoid arthritis who were hospitalized and treated with a combined cortisone and rehabilitation program at Bellevue Hospital in New York. As a result of favorable impressions gained from treatment of this pilot group, a full-scale research project was initiated in December, 1951, at Goldwater Memorial Hospital to study the problem more thoroughly. The present report is based on findings of the first two years with this latter group of patients.

EVALUATION FOR REHABILITATION

Before proceeding it would be well to crystallize a mutual understanding of the connotation of the term rehabilitation. Rehabilitation has been described as the third phase of medicine, third, i. e., to (1) diagnosis and

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The cortisone and hydrocortisone used in this study were supplied by Merck & Company, Inc., Rahway, N. J.

The phenylbutazone used in this study was supplied under the trade name of Butazolidin by Geigy Pharmaceuticals, Division of Geigy Company, Inc., New York.

[1] The Magnitude of the Chronic Disease Problem in the United States, Bulletin 6, Sickness and Medical Care Series, National Health Survey, Preliminary Reports, Division of Public Health Methods, National Institutes of Health, United States Public Health Service, 1938.

[2] Woolsey, T. D.: Prevalence of Arthritis and Rheumatism in the United States, Pub. Health Rep. 67: 505-512 (June) 1952.

[3] Preliminary Report, Committee for Survey of Research on Rheumatic Diseases, Division of Medical Sciences, National Research Council, 1948.

[4] Primer on Rheumatic Diseases: Prepared by a Committee of the American Rheumatism Association, J. A. M. A. 152: 323-331 (May 23) 1953.

(2) specific therapy. The *objective is the return of the* patient to his place in society, functioning within the limits of his disability but to the hilt of his capability. Such a concept entails an expanded responsibility of the physician to his patient that extends beyond the familiar first and second phases of medical responsibility. In most cases, rehabilitation, or the third phase of medicine, is assumed by the physician treating the patient for his specific illness and only in cases of severe disability are special rehabilitation facilities and special attention to job placement needed. Rehabilitation, however, under either circumstance cannot be divorced from diagnosis and specific therapy. On the contrary, its success depends upon a high degree of competence in these former. In the severe cases being reported here, special procedures have been necessary and have been prescribed and carried out under the direction of physiatrists as well as rheumatologists.

In the initial evaluation of a patient crippled with rheumatoid arthritis many kinds of information are needed before a reasonable program may be formulated.

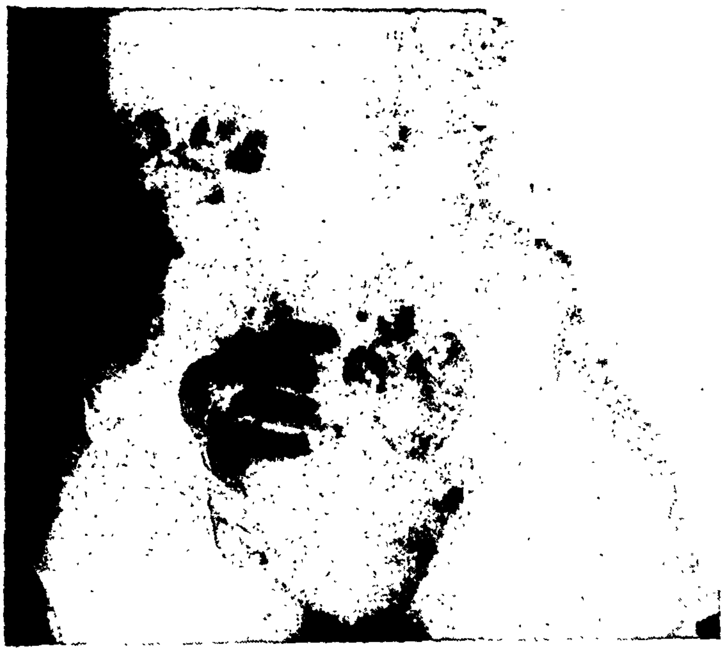

Fig. 1.—Damage in hip joints secondary to rheumatoid arthritis.

Medical Examination.—One must have first an accurate evaluation of the patient's arthritic process. This requires a detailed history and physical examination, laboratory examinations, roentgenologic examinations, and, where necessary, the consultative opinion of other specialists. From these data is derived some indication of the extent, severity, and "heat" of the arthritic process. It is of interest that of 285 patients referred to the project as severely crippled 24 or 9% did not have rheumatoid arthritis and 5% had rheumatoid arthritis but their disabilities were from causes other than the arthritis and of graver significance to them than their arthritis.

Functional Evaluation.—In addition to the above medical appraisal of the patient's disease, it is necessary to have other information that may pertinently modify the over-all prognosis and rehabilitation goal. First, the muscle status of the patient must be evaluated to identify weaknesses and the locations of these weaknesses. Individual muscles are tested and graded on a special chart originally developed and used for patients with poliomyelitis. This evaluation of muscle power is pertinent in the rheumatoid patient since joints are of no value to a patient if the muscles, which are the guy wires about the joints, are inadequate to stabilize and mechanize them. Next, joint ranges of motion are measured and recorded. This is important not only for determining total range of motion but also for establishing the phase of the range of motion arc in which ther may be limitation of motion. The latter is of considerabl greater significance from a functional standpoint tha the former. A knee, for example, may have excellen range of motion of greater than 90 degrees and still b contracted in flexion by a crucial 15 degrees, thus seri ously hampering the mechanics of weight-bearing.

Table 1.—*First of Four Pages Listing Activities Considere Essential to Independent Living ("Activities of Daily Living")*

PHYSICAL DEMANDS OF DAILY LIFE-FROM BED TO JOB

DATE..............
NAME.................................. WARD...... AGE...... SEX......
ADDRESS........................... APPARATUS.........................
CAUSE............................... DIAGNOSIS.........................
DISABILITY................ DATE ONSET......*DATE REFERRED*.....

Method of Recording Test

☐ 1. If at the time of the initial testing an activity cannot be performed *independently*, leave the block blank.

☐ 2. If the activity can be performed *independently*, fill in the block with Blue pencil.

☐ 3. If the activity is not essential for the person's physical demands, draw diagonal lines in the block.

Method of Recording Progress

☐ 1. When the activity can be performed *independently*, fill in the block in Red and indicate the date of accomplishment.

I. *NON-WALKING ACTIVITIES*

A. *Bed Activities*

		Date
1. Moving from place to place in bed.......	....	....
2. Roll to right and then to left side.......	....	....
3. *Sitting* erect in bed.......................	....	....
4. Turn and lie on abdomen................	....	....
5. *Procure objects from night table*........	....	....

B. *Hygiene (Toilet Activities)*

1. *Combing or brushing hair*................	....	....
2. Brushing teeth............................	....	....
3. Shaving or putting on cosmetics.........	....	....
4. Washing hands and face..................	....	....
5. Washing extremities......................	....	....
6. Manipulating bed-pan.....................	....	....
7. *Applying urinal special pants*..............	....	....
8. Taking shower............................	....	....
9. *Tub bath*...................................	....	....
10. Ability to dry self after shower or bath.	....	....
11. Adjusting clothing for toilet needs.......	....	....

C. Eating Activities

1. Cutting meat...............................	....	....
2. Buttering *bread*.............................	....	....
3. Eating with fork............................	....	....
4. *Eating* with teaspoon, tablespoon.......	....	....
5. *Drinking from glass*.........................	....	....
6. Drinking from cup..........................	....	....
7. Stirring coffee, tea, etc....................	....	....

The patient is then evaluated with actual functiona testing. While muscle power and joint ranges of motio are valuable sources of information and suggestive of functional capacity, the inference as to function is not always valid, for pain may be an additional limiting factor. Patients are therefore given additional tests in the performance of activities necessary to self-sufficient living. These many activities are collectively referred to as "activities of daily living" (table 1). This list of more than 100 activities ranges from the simplest bed and personal hygiene activities to the most demanding ambulation and elevation activities, including traveling via public transportation. The degree of functional impairment is thus directly measured and scored and, with the muscle power chart and range of motion measurements, correlation of functional with physical deficiencies can then be assessed. The sum total of these gives an indication not only of deficiencies but also of the physical potential of the patient.

Psychosocial Evaluation.—Finally, the psychological, the social, and the vocational assets and deficits of the patient must be appraised. What is the social and economic status? How has the patient psychologically adapted to the disease and what is his goal in rehabilitation? What intellectual and vocational assets are there upon which to formulate future plans? The minutiae of these facets are carefully sought out, for they may prove as acutely important to the over-all success of the rehabilitation undertaking as any of the more obvious medical aspects of the case.

The sum total of all these data—the medical, the functional, and the socioeconomic—is used collectively to establish a rehabilitation goal for a patient and to initiate treatment toward this end. Goals as established initially often are not static ones and may be changed repeatedly throughout the course of rehabilitation as dictated by unanticipated changes in the patient's progress. For the patient with severe arthritis, treatment programs usually must be full-day ones individually prescribed. They may include treatment sessions with various physical therapy modalities, occupational therapy, remedial exercise, functional training for deficiencies in activities of daily living, psychological and psychiatric assistance, vocational guidance, and, where necessary, job retraining.

METHOD

In the first two years of the study, 50 disabled patients with rheumatoid arthritis were accepted for treatment with a combination of drug and rehabilitation therapy. Initially in the first year of the study certain arbitrary criteria for admission of patients were rigidly adherred to. Patients had to be within the 21 to 55 year age group. The rheumatoid process had to be an active one. For purity of statistical analysis, patients obviously in need of corrective orthopedic procedures were excluded. There could be no medical contraindication for hormone therapy, and the patient had to have severe functional impairment. To quantitate functional incapacity more precisely than the class 1 through 4 system of the American Rheumatism Association, patients were tested and scored also in the performance of activities of daily living. This is a list of over 100 activities considered necesary to self-sufficient living. These were categorized into 10 major groups and to each group a score of 10% was ascribed. It was decided arbitrarily that a patient must score at least a 40% deficiency after establishment on cortisone or any other type of antirheumatic maintenance medication to be retained in the severe disability group. This group of the first year, consisting of 24 patients, is referred to as group 1.

In the second year of the study a more lenient set of criteria was adopted to obtain a comparison group. Patients still had to have an active disease process. Problems primarily of an orthopedic corrective nature were excluded. Functionally the patient had to be sufficiently disabled to be unable to carry on a gainful occupation, either a job in the case of the male or housework in the case of the female. Patients meeting these revised criteria are referred to as group 2.

In total, 24 patients meeting the initial criteria and 26 meeting the revised criteria were treated for periods of time varying from 7 to 21 months. All were hospitalized on the rehabilitation wards of the Goldwater Memorial Hospital during this study. After acceptance into this study patients were evaluated medically, functionally, and psychosocially along the lines outlined above. After evaluation, drug therapy was started; in most cases this was cortisone or hydrocortisone administered orally. When maintenance dosages of the drug were established, physical rehabilitation programs were then started and patients were continued on both drug and rehabilitation measures. As an index of improvement, scoring in proficiency in activities of daily living was done before any treatment, after maintenance antirheumatic drug therapy, and repeatedly throughout subsequent weeks or months of rehabilitation. In this way it was possible to measure increased function induced by drug and by combined drug and rehabilitation treatment for comparison and objective evaluation of treatments. After discharge from the hospital, patients have been followed at regular intervals as outpatients in a follow-up clinic.

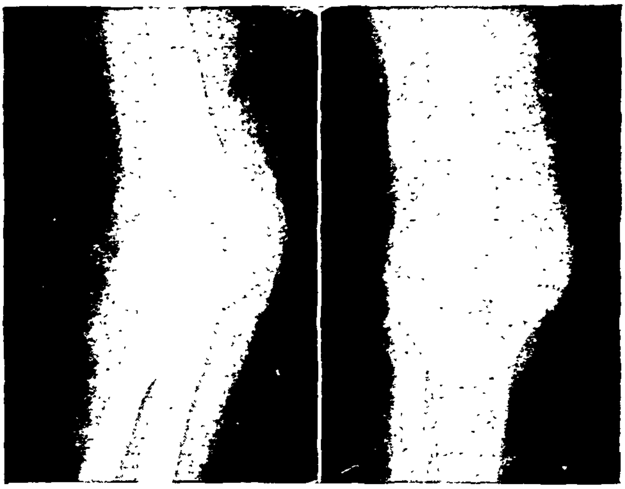

Fig. 2.—Damage in knee joint secondary to rheumatoid arthritis.

RESULTS

In the two year period of the study, 285 patients were referred to the project as "severely disabled rheumatoid arthritic patients" in need of a combined medical and rehabilitation program. For the reasons shown in table 1A 235 were rejected. It is significant that 24 of these, or 9%, did not have rheumatoid arthritis but suffered from other processes ranging from psychogenic rheumatism to metastatic prostatic malignancy. An additional 14 patients, or 5%, had rheumatoid arthritis but were more precariously disabled from other concurrent diseases. A total, therefore, of 50 patients was accepted for treatment. Of these, 24 were accepted the first year and met the rigid criteria for the severely disabled group (derelicts) mentioned above. In the second year 26 were accepted who were less severely disabled but still sufficiently disabled to be economically dependent. For various reasons 6 of each group were dropped from the study, leaving a total of 18 in group 1 and 20 in group 2 (table 2). It is of interest to note that of these 12, 3 were dropped because of frank psychosis, one because of borderline psychosis, and one because of hysteria; these clinical states were verified after the patients' admission to the hospital and precluded treatment with adrenal hormones. Three patients of the derelict group died during their hospitalization, one of cardiac failure, one of glomerulonephritis, and the third of an overwhelming septicemia; in no case were adrenal hormones contributory. For only one of the three had a rehabilitation program been started, and this had no relation to the fatal course of the preexisting disease process. The vital statistics of the two groups of patients are tabulated in table 2; it should be noted that the duration of the arthritis in the more severely disabled group was roughly double that of group 2.

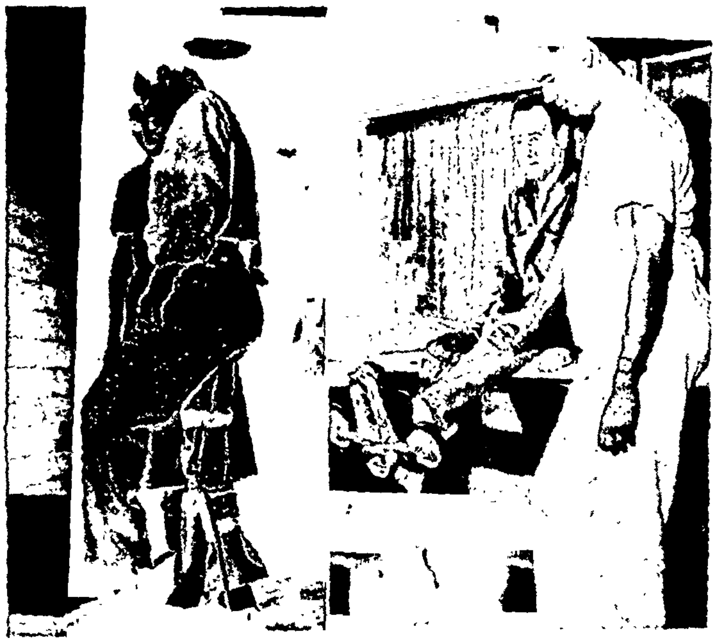

Fig. 3.—Patient doing progressive resistive exercise to build quadriceps power that will make elevation activities possible.

Since the ability of a patient with an active rheumatoid process to participate actively in an intensive rehabilitation program depends to a large extent upon the physician's ability to convert the progressive process into a static or partially static one, most patients required maintenance antirheumatic medication. Twenty-five of the 38 patients were treated with cortisone or hydrocortisone, while 8 were maintained on phenylbutazone. Only 5 of the 38 patients could be satisfactorily maintained on salicylates alone.

The results of treatment according to the American Rheumatism Association's method of classification showed that major improvements took place in the functional classes, with appreciable shifts from groups 3 and 4 to groups 1 and 2, indicating improvement in performance of activities essential to self-sufficient living. With use of the direct method of testing, the patient' ability to perform activities essential to daily living an his deficiency rating on a percentile basis are objectivel more apparent. This is shown in table 3. The average deficiency in group 1 was 60% initially, 53% afte establishment of maintenance antirheumatic medicatio and, finally, 29% after rehabilitation. Similarly, in grou 2, the initial disability average was 30%; after main nance medication this had decreased to 13%, and t final average after rehabilitation was 4%.

TABLE 1A.—*Reasons for Rejection of 235 Patients Referred to Project*

Reason	No.
Not rheumatoid arthritis	21
Disability not due to rheumatoid arthritis but has rheumatoid arthritis	14
Did not desire therapy on project	20
Problem primarily orthopedic	6
Receiving care at clinic or by doctor who felt patient would not benefit from project	10
Needed only cortisone or other arthritis clinic care	6
Overage or underage	21
Cortisone contraindicated	13
No care indicated (and/or arthritis burned out)	17
Nonresident	4
Not sufficiently disabled	49
Lack of motivation	7
Unable to evaluate	6
Needed care but not cortisone	8
Poor psychological risk (including low IQ)	12
Unknown (or miscellaneous)	19
Not financially eligible	1
	235

TABLE 2.—*Arthritic Patients Accepted for Study*

	Group 1 (Severely Disabled)	Group (Less Severel Disable
Total no	24	26
Separated		
Death	3	..
Psychotic	1	2
Prepsychotic	1	..
Hysteria	1	..
Senility	..	1
Voluntary	..	3
Subtotal	18	20
Sex		
Male	8	7
Female	10	13
Average age, yr	46.2	40.2
Average duration disease, yr	13.2	7.2

The final disposition of patients at the termination the initial two year period (table 4) left only four p tients hospitalized as custodial care cases; these were patients from the severely disabled or derelict group. would be expected the results were better with the le severely disabled than with those of the severely d abled group. However, 22 of the total 38 patients we totally self-sufficient upon discharge and 12 partial self-sufficient. Eight patients were placed in jobs outsi the home; this does not include those housewives w returned to their homes capable of resuming their jo as housewives, nor does it include patients engaged homework. In every patient, including the four remaining as hospital custodial cases, there was significant percentile improvement in function.

COMMENT

While it is still too early to arrive at final conclusions from this study, certain observations have crystallized that should be indicative of trends of thinking in this direction. As a result of our experience we have become acutely aware of certain key factors that seem to be of most decisive importance in determining the extent of the rehabilitation goal for a given rheumatoid patient. The positive or negative aspects of these factors seem to be the signposts that will most accurately indicate success or failure in attainment of objectives.

Drug Tolerance.—It is generally agreed that the ideal chronic rheumatoid cripple for rehabilitation is the patient with a burned out or quiescent case in whom control of the disease process has become an accomplished fact. Such patients present disabilities of a static nature, and the worrisome problem of a continuing disease process progressively worsening the disability is not a factor. We have included none of these in our study but have restricted the selection of patients to those with active disease processes. The control therefore of the active rheumatoid disease process has been necessary before undertaking rehabilitation. In our cases, the disease has been treated medically with various types of therapy but most frequently with cortisone or hydrocortisone. While we share the view with many others that the use of hormones generally should be restricted to a small portion of the over-all spectrum of patients with rheumatoid arthritis, the patients selected for this study all were of the group with chronic, active, progressively crippling disease processes that demanded any measure capable of partially or totally subduing the disease. In a large number of cases cortisone or hydrocortisone was the drug of choice. Our policy initially was to begin therapy with larger doses of the hormone and to gradually reduce dosage to a minimal maintenance level; in all cases, however, it was insisted that maintenance levels be below 75 mg. per day in the case of cortisone or 50 mg. in the case of hydrocortisone, even at the expense of permitting persistence of some of the disease symptoms. More recently the approach to maintain levels has been the reverse; steroid therapy has been started with small doses of 15 to 25 mg. per day and gradually increased to the lowest maintenance level capable of controlling symptoms, but again always restricting to the above maximum levels. We are more enthusiastic about this latter approach not only because of the lesser danger of undesired effects but also because patients accept a gradual build-up of dosage to a maintenance level more readily than the withdrawal of an excess. The initial therapeutic effect is a less spectacular one, but the over-all result is the same and attainment of it easier.

TABLE 3.—*Functional Deficiency According to Activities of Daily Living Method*

	Group 1	Group 2
No. of patients	18	20
Before medication	—60%	—30%
After medication	—53% (15 patients)	—13% (18 patients)
After rehabilitation	—29%	— 4%
Duration of treatment	339 days	223 days

TABLE 4.—*Final Disposition of Patients in Study*

	Total	Improvement in Function, %
Group 1	18	....
Discharged totally self-sufficient	7	+39
Discharged partially self-sufficient	7	+26
Custodial hospital	4	+20
Jobs	1	....
Group 2	20	....
Discharged totally self-sufficient	15	+21
Discharged partially self-sufficient	5	+29
Jobs	7	....

The effectiveness of the steroid in controlling the symptoms of the arthritis and the tolerance of the patient for the hormone are important factors modifying the attainment of rehabilitation objectives. One of us (E. W. L.) with Ward and co-workers [5] previously reported on the tolerance of patients for cortisone. At that time it was stated that if doses were maintained below 75 mg. per day the frequency of undesirable hyperadrenal effects was 21%, whereas if the dosage were kept at or above 75 mg. per day the frequency was three times as great, or 63%. In this present group of long-term patients we have seen hyperadrenal effects in 72%. In only two, however, was it necessary to discontinue the medication, and both were subsequently restarted on the same therapy. The length of treatment has ranged from 6 to 22 months. Only one patient has been maintained on a cortisone dosage above 62.5 mg. per day. Others have been maintained on a dosage ranging from 30 to 62.5 mg. per day.

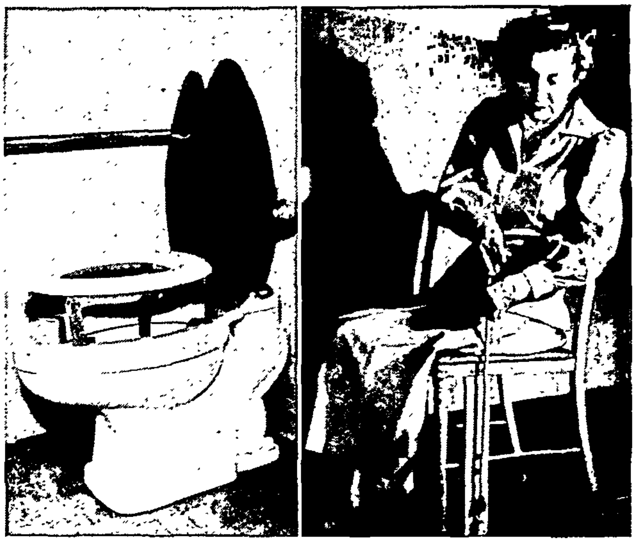

Fig. 4.—Elevated toilet seat to eliminate work from knees; chair elevated on casters provides mobility as well as additional height—standard doorstops have been adapted for locking it in a stationary position.

In six patients phenylbutazone has been an effective anti-inflammatory drug, and these patients have been satisfactorily maintained on this preparation. Two of us

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[5] Ward, L. E., and others: Clinical Effects of Cortisone Administered Orally to Patients with Rheumatoid Arthritis, Proc. Staff Meet., Mayo Clin. 26: 361-370 (Sept. 26) 1951.

(E. W. L. and P. R. L.) with Brodie and co-workers have recently published extensive data on the use of phenylbutazone,[6] and on its analgesic and anti-inflammatory qualities and have particularly stressed its toxic implications.

In arriving at maintenance drug levels for the rheumatoid patient, one pitfall should be stressed. While the mechanisms of action of cortisone or of hydrocortisone remain to be clarified, it is established that their anti-inflammatory effect is the primary beneficial effect for the rheumatoid patient. It is important therefore that dosage be geared to this effect alone and not to pain. Since rheumatoid patients of the type reported here suffer pain from mechanical damage within joints in addition to the fibrositic pain of the primary disease process, steroid dosage should be regulated solely to cover the latter. When dosage is progressively increased in an attempt to alleviate the joint discomfort that follows use of mechanically impaired joints, the dosage frequently stepladders to much higher levels than would be necessary if the above criterion were adherred to. No attempt should be made to alleviate pain subsequent to hypertrophic changes but only that due to the rheumatoid process per se. Careful differentiation must be made clinically in evaluating these two sources of symptoms and the drug restricted accordingly if serious hyperadrenal pitfalls are to be avoided and long-term therapy carried out successfully.

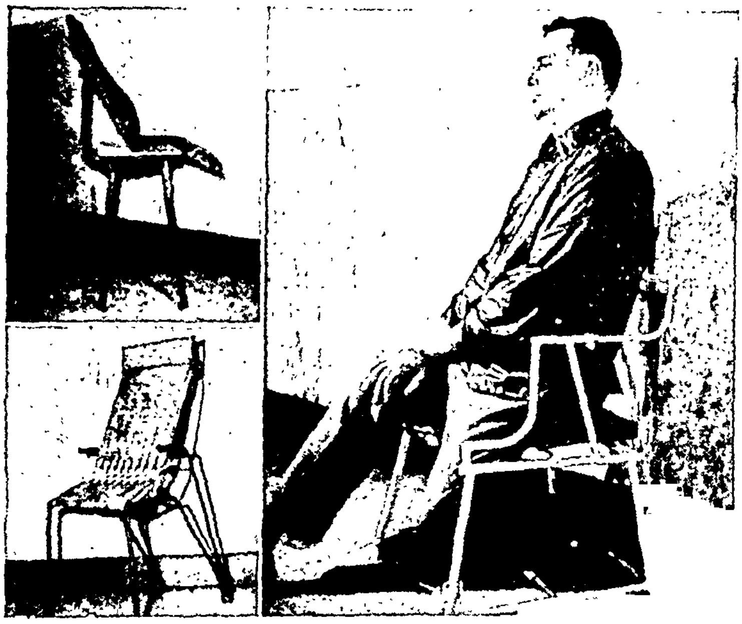

Fig. 5.—Right, chair, mobile on bearings, with cutout seat and knee rest to accommodate ankylosed hip. Upper left, high stool adaptable to sitting limitations of spondylitic. Lower left, chair with crutch tips to prevent sliding constructed with extra height and with adjustable sling seat to accommodate spondylitic.

Joint Mechanics.—The tolerance of joints for physical activity is dependent not only upon the degree of inflammation imposed by the rheumatoid process b also upon the extent of mechanical damage that has a crued. It must be remembered that, while the inflamm tory synovitis is the prominent presenting sign in rhe matoid arthritis, the disease process also produces chondritis, an osteitis, and a sterile osteomyelitis. All these predispose the joint to destructive changes in ca tilage and bone. Furthermore, such joints are intolera of normal amounts of work imposed by weight-beari and other normal activities and are more readily prone wear. These two factors, i. e., direct involvement by t disease process plus the tendency to wearing, predispo to destructive changes within the joint. These we pre to call secondary hypertrophic arthritis in contradisti tion to the inflammatory rheumatoid process (fig. 1 a 2). The degree to which secondary destructive chang have taken place will accordingly mechanically mod the tolerance of the joint for activity. These are ir versible changes, except for those that may be modif by orthopedic surgical procedures, and they impose li tations on a rehabilitation goal.

There is no ready index for determining joint tol ance. While roentgenograms are helpful, they may a be grossly misleading. We have come to rely upon th solely as confirmatory evidence. Frequently patients w roentgen evidence of severe damage will tolerate co siderably more strenuous exercise procedures than oth with minimal roentgen evidence of damage. Trial, the fore, is the best means of determining a patient's tol ance, and goals for a given patient must be modified conform to this tolerance of his joints. In the sever crippled group of patients seen by us it has not inf quently been clearly evident at the onset that ambulat was not a feasible objective, and treatment and train accordingly have been restricted to self-care, bed, a wheel-chair activities.

It should be pointed out that secondary hypertrop changes in joints of the lower extremities are much m restrictive than are such changes in upper extrem joints. This is as would be expected, since lower extre ities are primarily "work-horses" while upper extremit are mainly concerned with activities involving dexte and agility and are not weight-bearing. Goals in terms self-care and other self-sufficiency activities may aimed considerably higher in the face of upper extrem damage than in the face of lower extremity damage o comparable degree.

Psychological Soundness.—More so than with a other rehabilitation problem, the psychological timbre the rheumatoid arthritic is a major force in determini success or failure in attainment of goals. In the cou of this study we have become acutely aware of this fac and have intensively studied the problem with a ps chiatrist, a psychologist, and two psychiatric soc workers. The results of their observations have not in cated the existence of a predisposing rheumatoid p sonality as has been suggested by other investigato Rather, it is felt that in the course of a progressive d ease such as this, accompanied as it is by more and mo disability and a fluctuating but constant pain, the psyc becomes more or less inundated by the constancy, t hopelessness, and the helpless frustration to which it subjected. The result is an exhaustion of psychologic conomy and a reversion to passivity and dependency. t would appear that the degree to which the latter endency crystallizes depends not upon a preexisting pecific rheumatoid personality but rather upon the oundness of the patient psychologically prior to the onet of his arthritis and upon the tempo of the disease rocess. Since this process of regression to dependency a slowly cumulative one, it is unreasonable to expect hat sudden reversal of the state can be quickly effected. he reverse is true; the refractoriness of the deep seated ependency and passivity is the most restrictive factor in ccomplishing rehabilitation. It is easy to evaluate a paent medically and physically and know what goals are asible and within these limitations, but, unless a paent's goals are in accord with the physician's, the diverence in result will duplicate this difference in objective. n an effort to establish mutual goals we have undertaken o weld a good physician-patient relationship; this is articularly important with this group of patients who y and large have exhausted all medical resources without the relentless process of their disease having been halted; their alienation from physicians should be expected, and the reestablishment of confidence should be actively sought. In addition, we have utilized individual supportive psychotherapy and group psychotherapy sessions for airing and surfacing of hostilities.

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[6] Brodie, B. B., and others: Observations on the Antirheumatic and Physiologic Effects of Phenylbutazone (*Butazolidin*) and Some Comparisons with Cortisone, Am. J. Med. 16: 181-190 (Feb.) 1954.

[7] Johnson, A.; Shapiro, L. B., and Alexander, F.: Preliminary Report on a Psychosomatic Study of Rheumatoid Arthritis, Psychosom. Med. 9: 295-300 (Sept.-Oct.) 1947. Rome, H. P.: Neuromuscular and Joint Diseases and the Psychosomatic Approach, M. Clin. North America 33: 1061-1069 (July) 1949. Ludwig, A. O.: Psychogenic Factors in Rheumatoid Arthritis, Bull. Rheumat. Dis. 2: 15-16 (April) 1952. Halliday, J. L.: Psychosomatic Medicine and the Rheumatism Problem, Practitioner 152: 6-15 (Jan.) 1944. Ludwig, A. O.: The Psychotherapy of Rheumatoid Arthritis, unpublished study.

Motivation of the patient is essential if rehabilitation goals are to be attained

Many patients with rheumatoid arthritis develop a passive dependency to their disease and to disability, which restricts rehabilitation possibilities

At times this dependency may be irreversible and it is wise to screen patients carefully from this standpoint before instituting a program

In the psychosocial survey of our patients the following factors frequently have been the indexes pointing toward motivation and possible success in rehabilitation

- Specific and realistic goals in rehabilitation
- Fair or reasonable standard of living
- Second generation American
- Good work history
- Successful marriage
- Moderate religious practice
- Financial independence at least five years prior to illness
- Minimal focus on hypochondriac symptoms
- Adequate ego strength
- Adequate body image

In the course of studying this almost inevitable passivity and dependence among these chronic cripples, we have found that in many patients it has been a reversible process that when approached therapeutically with the above measures would melt away and permit acceptance of reasonable goals. We have been interested, therefore, in trying to sort out the common denominators in these successful rehabilitees so that we might identify the assets they possessed that permitted them to carry on successful programs while others could not accept or work toward similar goals.[8] In analyzing psychosocial data in regard to the factors listed above, we have found that the typical successful candidate has been a second generation American of poor early socioeconomic status and moderate religious practice.

He has adjusted heterosexually in a normal fashion and achieved a successful marriage without evidence of conflict; where conflict arose he showed decisiveness in terminating the unsatisfactory marriage. He began work early without direct pressure and maintained a good work history. Economically he attained a fair or reasonable standard of living superior to that of his early family status and maintained his home independently with his spouse. Financially he had been independent for at least five years prior to the onset of his illness. The length of his illness was essentially the same as was the age of onset of his illness in comparison to the unsuccessful rehabilitee; his disability, however, was generally less severe. His attitude toward his illness generally was one of acceptance of life within limitations but with maximum function and without undue conflict. His goals in rehabilitation, in contrast to the vague, confused, unrealistic ones of the unsuccessful candidate, were generally specific and realistic. His use of the psychosocial department in the hospital was for control of the environment and for development of insight. In contrast to the unsuccessful candidate, his degree of focus on hypochondriac complaints was of only moderate or minimal degree. While he showed passivity and acceptance, it was with some conflict and considerable fear and reluctance to ask help from others; this was a sharp difference from the unsuccessful candidate, who was aggressive and demanding in his reaction to dependency. Psychologically, the successful candidate was of low-average or better verbal intelligence, with adequate ego strength; he showed control and limitation of both of his emotional experience and his imaginative experience, and his desire and capacity for pleasurable experiences far outweighed his depressive moods. There was rela-

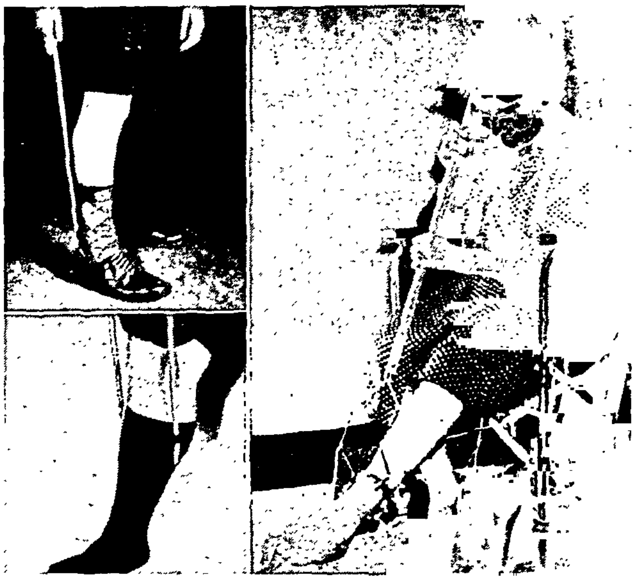

Fig. 6.—Upper left, elastic shoelaces and long shoehorn. Lower left, sock tabs and hooks. Right, stocking put-on device.

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[8] Lowman, E. W., and others: Psycho-Social Factors in Rehabilitation of the Chronic Rheumatoid Arthritic, Ann. Rheumat. Dis. 13: 312-316 (Dec.) 1954.

tively little oral need or concern with this and an adequate image of his body without distortion or bizarre interpretation. The unsuccessful candidate consistently showed the opposite of these psychosocial features to such an extent that we now feel the above to be good criteria for prognosticating which chronic arthritics may be good risks for acceptance into rehabilitation programs, and we have more recently undertaken to sift on this basis. These are the factors, we feel, that measure motivation in a patient.

Functional Training.—While joint ranges of motion, muscle power, and a joint's tolerance for activity are rough indexes of a patient's functional capacity, the latter is the primary objective and the former are important only as they contribute positively to function. Functional training in rehabilitation therefore is stressed and training is directed toward attainment of the maximum performance of those activities that are essential to independent daily living. The human body as a machine normally functions on a grossly inefficient level. It has been said that as human machines we are less 25% efficient. Even in the face of severe disabilities one may, therefore, be taught to attain a considerably higher degree of efficiency to compensate for irreversible physical deficiencies. Tedious training and months of practice may be required, but such an approach frequently provides keys to functional independence. Because of this, functional training is an important part of a patient's daily program and, as he accomplishes proficiency in one sphere, emphasis is then shifted to the next. Physical and occupational therapy treatments are directed toward strengthening of weak muscles and loosening of restricted joints, but only so that training in activities of daily living may be accomplished more readily (fig. 3).

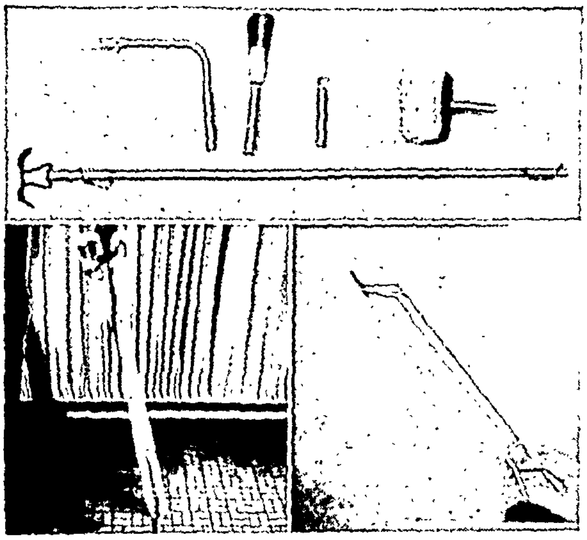

Fig. 7.—Top, all-purpose stick with attachments such as cellulose wash brush, hook, shoehorn, and comb for reaching inaccessible parts. Bottom, types of pick-up sticks useful for retrieving out-of-reach objects.

Socioeconomic Factors.—The reestablishment of the arthritic in a social and economic situation in which he may be able to function independently is, of course, the ultimate in rehabilitation objectives. The attainment of this goal either in part or in whole may require exhaustive resource and patience. The usual superficial social inquiry in itself is inadequate but must include detailed inquiry into the family structure and an intimate knowledge of the living conditions to be faced by the patien after his discharge from the structured and protective environment of the hospital. Apparent minutiae may assume crucial importance in determining the capacity o a patient to function in his home. The inability to clim three steps from street to house may make the differenc between ability and inability to travel to a job. A be or toilet or chair of satisfactory height or a bathroo door of sufficient width to permit entrance of a whee chair may be the factor determining whether a patien may live self-sufficiently alone at home or whether a attendant or a nursing home will be necessary. In mos cases the social worker must make one or several hom visits in an effort to clarify potential problems and t remove them. At times even relocation of housing ma be in order if this will enable the patient to travel to an from a job or if the change will render a patient sel sufficient in his new home, thus releasing another famil member to a job.

Job placement remains the most difficult objective t attain. There are few patients who could not carry o some gainful occupation were circumstances ideal an such resources as homework or sheltered worksho available to them. The most restrictive factor is inability to travel to and from work; most often this is a inability to utilize public transportation, but confinemen to home not infrequently results from isolation in walk-up apartment. The competitive labor market presents an additional obstacle to job placement. Sinc arthritics are physically unfit for manual labor and require specialized placement in relatively sedentary pos tions, the limited availability of the latter type job presents a problem unless the patient possesses precise skil or intellectual assets that may be sold. At times, re training may be indicated in order to accomplish th latter. If this is undertaken, the patient's psychologic and vocational aptitudes must be carefully assessed b the psychologist and vocational counselor in collaboration with the social worker so that formulation of re training plans may be on a practical level.

Special Devices.—Special apparatus is avoided unt its use becomes essential in order for the patient t function. When proficiency in an activity of daily livin requires additional mechanical assistance, only then ar special devices provided the patient. The great numbers of these self-help devices that have been develope for the arthritic are too numerous to mention except fo those more important ones notable for simplicity an usefulness.

Chairs, Wheel Chairs, and Toilet Seats: Chairs, (fig 4) wheel chairs, and toilet seats of standard height ofte pose major mechanical problems for the arthritic. Wit seats of a standard 17 or 18 in. height the work impose upon knees is frequently sufficiently painful to preclud use by patients who have involvement of these joints The sheering effect of rising from a standard height ca be eliminated by raising the seat of the wheel chair o chair structurally or with sponge rubber cushions to giv added elevation. Toilet seats, in like manner, may b mastered by the simple expedient of using a built-up removable seat that adds 4, 5, or 6 in. in height, or the toilet seat may be incorporated into a mobile chair that rolls over the toilet bowl. In instances of more disseminated involvement and especially in instances of rheumatoid spondylitis with peripheral joint involvement, it may be necessary to individualize the modifications to provide adequate sitting (fig. 5). This is especially true when there is ankylosis of one or of both hips in an extended position. Seats for such patients may be molded from Fiberglas impregnated with plastic and may be cut out or elevated as needed to accommodate the specific deformity.

Aids in Dressing: Dressing activities at times may be partially or totally impossible because of mechanical restrictions imposed by joint limitations. Zippered shoes, long-handled shoe horns, devices for putting on socks, stockings, and underwear, long-handled combs, and elastic shoelaces are often of advantage in these cases (fig. 6). An all-purpose utility stick with multiple attachments (fig. 7) has recently been developed for these purposes.

Aids in Feeding and Self-Care: In patients with shoulder or elbow limitations special long-handled devices for feeding and self-care (fig. 8) are helpful. Where hands and wrists are involved so that use of these joints functionally is impaired, special writing, feeding, shaving, toilet, and other devices offer assistance to the patient.

Crutches: Crutches, where needed, are usually an individual problem. This is apparent when one realizes the combinations of joint involvements that may present themselves in the upper extremities. Depending upon the residual function in the joints of the upper extremities, crutches must be worked out for the particular case. There are numerous variations of crutches, ranging from the standard hand-grip type to those permitting elbow resting.

Aids in Housekeeping: For the housewife careful planning and reliance upon such home energy-saving devices as work tables on casters and adjustable ironing boards can effectively reduce the work that otherwise might be placed on her joints in the course of her job as housekeeper.

Braces: Braces are infrequently used for the severely crippled arthritic. The notable exception is the patient whose lower extremity joints have been involved by destructive changes of a degree sufficient to cause pain on use. When knees or hips are so involved, bracing short of ischiatic weight-bearing is inadequate, and for such patients this type of brace is often prescribed with benefit; weight-bearing for such cases is thus shifted to the ischiatic tuberosity from the involved hip or knee. Splints are employed for two purposes: correction of deformity and prevention of deformity. The most important indication for correction of deformity is knee flexion deformity. In such cases a special type of knee extension brace is employed to maintain through the night the extension gained in the day by hot packing and manual stretching. In prophylaxis, two deformities especially are to be guarded against, i. e., wrist drop and ulnar deviation of the hand. For the former the old type of cock-up splint is still the most effective. Ulnar deviation on the other hand has presented a particularly perplexing problem. We have therefore experimented with many variations and have found that a Fiberglas molded splint is the most useful; this provides correction of the deviation and at the same time is light in weight and comfortable for the patient.

FOLLOW-UP STUDY

While the results of the first two years of this study have produced encouraging results for both the severely and the less severely disabled patient with rheumatoid arthritis, there still remain some doubts as to the general feasibility of the approach. The period of hospitalization required for these patients was protracted and costly in the face of such serious disability. If the patient, however, is permanently restored to self-sufficiency personally and/or economically, the investment can be justified, for in the long run it will repay itself in earnings either by the patient or by others in the home who may be released from caring for the patient to return to gainful occupation. The crux of the decision then, despite the initial favorable results, will remain to be answered in the follow-up study of these patients. Patients reported on in this two year study accordingly are now being followed as outpatients on a regular basis, and this follow-up will continue for a total of three more years. A number of questions yet to be answered will be solved in this observation period.

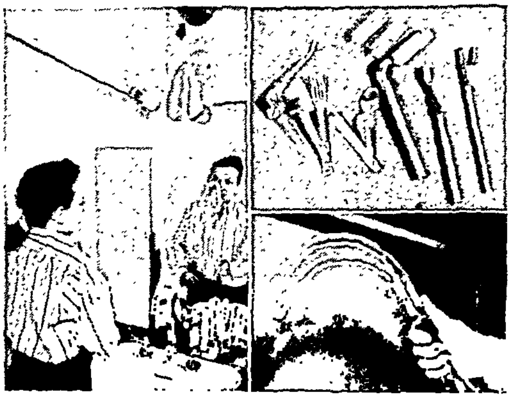

Fig. 8.—Left, wash cloth or powder puff holder. Upper right, long-handled utensils. Lower right, toilet paper holder.

Continued Control of the Rheumatoid Process.—Maintenance of functional gains will in large measure depend upon continued control of the inflammatory rheumatoid process. Patients therefore are committed to indefinite continuance of antirheumatic therapy. The length of time that administration of such medicaments may be continued without development of serious undesirable physiological or toxic effects is still a moot question.

Carry-Over into an Unprotected Environment.—The capacity of a patient to function within the protected environment of a hospital varies considerably from the nonstructured environment of home or job. The increased physical demands of the latter will undoubtedly impose added strain on the stability of the rheumatoid arthritis as well as greater mechanical stresses on joints. It remains to be seen whether continued use of functional gains will accentuate wearing (secondary osteoarthritis) within joints and result in regression.

Proper Housing.—The adequacy of housing has constituted a constant problem. In a metropolitan area such as New York City it is extremely difficult to locate low-cost living quarters with adequate space and without stairs. Low-cost housing projects are currently allocating a percentage of all new construction to disabled persons, and these quarters will be especially constructed to minimize physical hazards of living. Until these are available many patients will remain confined to walk-up flats either housebound or dependent upon others for assistance in getting in and out of apartments.

Continued Psychosocial Support.—Since the rheumatoid arthritic is frequently a more passive and dependent person, the continued availability of psychosocial support assumes significant importance. This will entail not only continued psychological support in the solution of vocational, social, and economic problems but also active assistance in working them out decisively.

Employment.—Placement of the arthritic in competitive employment is restricted by the stigma of crippling, by the mechanical impediment of assistive devices such as crutches, by the shrinking labor market, and by the restricted ability of an arthritic to use public transportation to and from work. Of all these factors, the latter is the most difficult hurdle in a city such as New York. Not only is traveling physically exhausting but also it imposes excessive work on joints that have little reserve; hence, it frequently is the insoluble obstacle to productive employment. Unfortunately, homework for housebound or semi-housebound persons or sheltered workshops for such persons are almost nonexistent. This s deplorable; of the patients who have undergone rehabilitation in this study, all but one could participate in homework or a sheltered shop with financial gain to themselves and with considerable resultant saving public assistance agencies at present rendering them nancial help.

SUMMARY

A total of 38 patients with chronic rheumatoid thritis hospitalized in the past two years were treat with a combination of medical and rehabilitation pr grams; 18 of these patients were severely disabled cri ples, and 20 were less severely crippled. The avera age of the severely disabled (derelict) group was years, with a disease duration of 13 years. In the l severely disabled group the average age was 40 yea with a disease duration of seven years. Of the 18 verely disabled persons, 14 have been discharged fr the hospital. Seven of these are totally self-sufficie and one has been placed in a job. The other seven ha been discharged partially self-sufficient, with an avera increase of 26% in functional capacity. Four patie of the group remain custodial hospital patients, among these there has been a 20% increase in functi Of the 20 less severely disabled persons, all have be discharged from the hospital. Fifteen are totally se sufficient, and the remaining are partially so, with average increase of 29% in function. Seven of these patients have been placed in full-time jobs.

With the concerted teamwork attack used in this stu it would seem that the patient with chronic rheumat arthritis does not have an insoluble problem and t many such people could be salvaged from their inval ism and brought back to the dignity of living. The tients engaged in this study are now being followed an additional three year period to verify the validity this inference.

400 E. 34th St. (16) (Dr. Lowman).

HYPOGAMMAGLOBULINEMIA ASSOCIATED WITH A SEVERE WOUND INFECTION

Earl O. Latimer, M.D., Edward J. Fitzsimons, Ph.D.
and
Paul S. Rhoads, M.D., Chicago

In recent years agammaglobulinemia, more properly called reduced gammaglobulinemia or hypogammaglobulinemia, has been reported in children.[1] This recently described entity is characterized by recurrent, severe bac-[illegible]al infections, which are evidence of deficient antibody [illegible]uction associated with almost complete absence of serum gamma globulin but with relatively normal total protein concentration. A patient with an abnormally low serum gamma globulin level, while under our care, veloped a severe surgical wound infection. We beli this patient's hypogammaglobulinemia either was sponsible for, or contributed to, her severe wound inf tion. To our knowledge no such condition has been ported as occurring in an adult; however, during t preparation of this paper, Sanford and his co-worker reported on an adult female, 39 years of age, who ha low serum gamma globulin level accompanied by bro chiectasis and a sprue-like syndrome. Their patient i proved markedly after administration of gamma glo ulin at monthly intervals. Subjective improvement w not apparent until 48 hours after the first injection gamma globulin. Janeway and his co-workers [1d] have r ported on a group of nine children with hypogammaglo ulinemia, six of their own patients and three the patien of colleagues. They report that several other patients whom deficiencies of gamma globulin have been tra

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From the departments of surgery (Dr. Latimer), pathology and biochemistry (Dr. Fitzsimons), and medicine (Dr. Rhoads), Chicago Wesley Memorial Hospital and Northwestern University Medical School.

[1] (*a*) Bruton, O. C.: Agammaglobulinemia, Pediatrics **9**:722, 1952. (*b*) Gitlin, D., in discussion on Bruton, O. C.; Apt, L.; Gitlin, D., and Janeway, C. A.: Absence of Serum Gamma Globulins, Society Transactior [illegible] A. Am. J. Dis. Child. **84**:632 (Nov.) 1952. (*c*) Schick, B., an[illegible] ., in discussion on Bruton and others, ibid. (*d*) Janeway, C. [illegible] ., and Gitlin, D.: "Agammaglobulinemia," Tr. A. Am. Phy[illegible], 1953.

[2] [illegible] .; *Favour, C.* [illegible] ribeman, M. S.: Absence of Serum [illegible] lins in an Ad[illegible] gland J. Med. **250**:1027, 1954.

:nt, partial, or acquired in later life have been brought their attention. All clear-cut cases reported by Janeɪy and his co-workers [1d] have been in males. Their pants had no gamma globulin as determined by electrooretic analysis; however, immunochemical studies realed small amounts of gamma globulin (less than 30 ;. per 100 ml.). The continued administration of antiɔtics was only partially successful in preventing recurɪt infections: The injection of 100 mg. of pooled nor- :l human serum gamma globulin per kilogram of body ight once a month gave these patients striking protecn against infection. In the discussion of his paper, Git- [1b] stated that a total gamma globulin level of 100 to 0 mg. per 100 ml., obtained by injection of pooled man serum, appeared to prevent infection. Low gamma bulin levels associated with low total proteins and ma have been reported.[1c]

REPORT OF A CASE

A 39-year-old woman was admitted to Chicago Wesley :morial Hospital on June 1, 1953. She had been seen by one us (E. O. L.) in May, 1953, because of a mass in the right raclavicular area, known to have been present for five months. e patient's attention was directed to the mass because of slight n in her right shoulder and arm. It had not increased in size. had been seen by her family physician and a consultant, h of whom advised biopsy for diagnosis. The patient's parents re living, as were two sisters, one of whom had some allergies. ice after her pregnancies the patient's mother had had a ious infection, both of which "responded only to serum." Our ient had had measles, chickenpox, and mumps during childɔd, tonsillectomy and adenoidectomy at age of 6 years, and appendectomy in 1949. All convalescences were uneventful. 1950 she had an infected hematoma of the left thigh that was te resistant to treatment, but later an anal fissure was surally excised without postoperative difficulty.

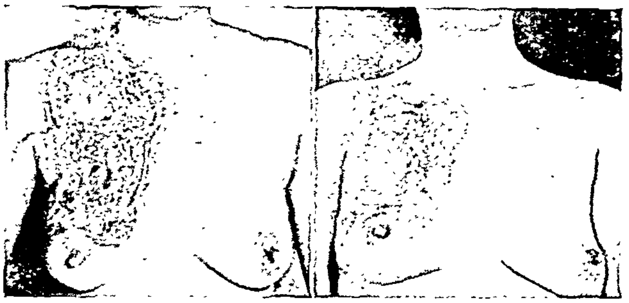
hysical and Laboratory Findings.—Upon examination on ıe 1, just below the right clavicle and lying deep to the pectoral scle, a movable, firm, and slightly tender mass, 5 cm. in greatest dimension, was found. Pressure on the mass caused n to radiate to the right shoulder. At 12 o'clock in the right ast was a 1.5 cm. nodule. Discrete, moderately firm, movable ɪph nodes were palpable in the right axilla. No enlarged ional nodes were found elsewhere. The remainder of the ysical examination gave essentially normal findings. Laboray findings preoperatively were hemoglobin 10.65 gm. per) ml. (68.5%), red blood cell count 4,050,000 per cubic millimeter, and white blood cell count 7,750 per cubic millimeter, h 70% polymorphonuclear leukocytes, 5% unsegmented lymorphonuclear leukocytes, 21% lymphocytes, 1% monoes, and 3% eosinophils. The results of the urine tests were thin normal limits. The prothrombin time was 80% of normal. e Kahn test was negative. The preoperative diagnosis was raclavicular and right axillary lymph node hyperplasia of un- :ermined etiology. The mass in the right breast was believed be a nodule of fat, but malignancy with metastasis to regional nph nodes was considered.

On June 2, 1953, the enlarged infraclavicular lymph nodes neath the pectoralis major muscle and the lesion of the breast re excised. The diagnosis following the tissue examination ıs follicular hyperplasia of lymph nodes and fibroadipose tissue ɔoma). The patient had a normal convalescence until her disarge from the hospital on the fourth postoperative day. At s time, a small amount of exudate escaped from the breast cision, but there was no evidence of cellulitis. Her temperature ıs normal. This was believed to be an insignificant wound inction, and the patient was permitted to go home. A moderate owth of Micrococcus (Staphylococcus) pyogenes var. aureus ıs cultured from the exudate.

Second Admission.—Two days later, on June 8, the patient ıs readmitted to the hospital because of a severe ıth surgical wounds. The wounds were opened ıick, creamy yellow-white exudate escaped. The

ture was 102 F, pulse rate 100 beats per minute, respirations 18 per minute, hemoglobin 10.3 gm. per 100 ml. (65.5%), red blood cell count 3,650,000 per cubic millimeter, and white blood cell count 10,650 per cubic millimeter, with 86% polymorphonuclear leukocytes and 14% lymphocytes. Fasting blood sugar level was 105 mg. per 100 ml. The liver profile was within normal limits. Penicillin was administered parenterally in adequate doses. The following day there was necrosis of the skin margins about the wounds. The skin and subcutaneous tissue at the edge of the wound became necrotic down to the muscle and overlying fascia. This necrosis continued to spread until the wounds coalesced and extended across the upper half of the right breast, the upper half of the right chest wall, and into the right side of the neck. At no time were the fascia and muscles involved, nor did the infraclavicular space beneath the pectoralis major muscle, from which the enlarged lymph nodes had been removed, become involved in the infection and necrosis. The oral temperature was 102.6 F on the third day, and the blood picture was hemoglobin 11 gm. per 100 ml. (71%), red blood cell count 3,960,000 per cubic millimeter, and white blood cell count 15,400 per cubic millimeter, with 94% polymorphonuclear leukocytes, 5% lymphocytes, and 1% eosinophils.

Repeated cultures of the exudate produced only a slowly growing nonhemolytic coagulase-negative M. pyogenes var. aureus organism. Anaerobic cultures were negative. Smears and cultures did not reveal a fungus. No streptococci or bacilli were found by smear or culture at any time. A micro-aerophilic nonhemolytic Streptococcus organism was repeatedly sought. No growth was obtained on blood cultures. Sulfonamides and various antibiotics were used in adequate dosage without apparent effect on the progress of the lesion. Antibiotics were used both systemically and locally. On June 8, therapy was begun with meth-dia-mer-sulfonamides (sulfadiazine, sulfamerazine, and sulfamethazine), 1 gm. every six hours; streptomycin and dihydrostreptomycin, 250 mg. each two times a day; aqueous penicillin, 300,000 units every three hours; oxytetracycline (Terramycin), 500 mg. every six hours; and erythromycin, 400 mg. every six hours. Therapy with the sulfonamides was continued for a total of 8 days, streptomycin, dihydrostreptomycin, and penicillin for 3 days, and oxytetracycline for 16 days. Erythromycin was given for 16 days, and then the dosage was lowered to 200 mg. every eight hours for 2 days.



Left, wound, June 19, 1953, showing extent of necrosis. Mark on right arm and axillary fold delineates upper and lateral extent of field receiving radiation therapy. *Right*, wound, Aug. 7, 1953. The wound is healed except for unepithelized central area. Complete epithelization had occurred by Oct. 7, 1953.

On the fifth day the total proteins were 5.42 gm. per 100 ml., with albumin 4.52 gm. per 100 ml., and globulin 0.9 gm. per 100 ml. One of us (P. S. R.) suggested that because of the low globulin fraction there might be a low gamma globulin, indicating that the patient was unable to build up antibodies against the infecting organism. Chemical and electrophoretic studies of the albumin and globulin content of the patient's serum were then made by one of us (E. J. F.), who also made comparative studies on the serum of the patient's father, mother, and two sisters (see table). Fresh whole blood as well as plasma was given, and efforts to secure gamma globulin were instituted. On June 13, 500 cc. of whole blood was administered and was followed by a chill and a temperature of 104 F. The next day, 250 cc. of reconstituted plasma was given, and the temperature again rose to 104 F. Reconstituted plasma, 500 cc., was given for the next three days, was skipped for one day, then was given again the next day, June 19. On July 3, after 500 cc. of whole blood was given, the patient had a chill. Gamma globulin could not be obtained immediately because, at this time, state regulations required that it be released only for protection against poliomyelitis.

On the 11th day x-ray therapy was started to the lateral portion of the wound only. In the meantime, the exposed pectoralis major muscle was becoming covered with healthy granulation tissue. The spread of the cellulitis process stopped on the entire periphery of the wound. On the 12th day bacitracin and reconstituted plasma were used locally. The following day, June 20, permission to use gamma globulin was obtained, and it was used locally in constant wet packs. Parenterally it was administered in the following intramuscular doses.

Date	Dose, Cc.	Date	Dose, Cc.
6/20	4	6/26	1.5
6/21	4	6/27	4
6/23	4	6/28	2
6/24	4	7/ 1	8

By the 17th day (June 24) of the second admission, the cellulitis at the periphery of the wound was rapidly subsiding. Healing progressed from the edges of the wound and from an occasional island of epithelium. Progress was rapid from this time on, and the patient was permitted to go home on the 30th hospital day. She was instructed as to arm exercises to avoid loss of function of the arm, and healing was complete on Oct. 7, 1953. Skin grafting was not used because of the fear of infection and necrosis developing at the donor site, even if split thickness grafts were taken. In December, 1953, the patient had an abscessed tooth. Gamma globulin and antibiotics were given prior to extraction of the tooth, and convalescence was uneventful. The patient has had no other serious illness or infection since.

COMMENT

The children reported by Bruton [3] and Janeway [1d] had very little resistance to infection, but the administration ooled gamma globulin gave them striking protection. their patients were males; our patient differs in respects, being an adult female who had normal tance to the usual childhood diseases. She has a definite hypogammaglobulinemia a ined by electrophoretic analysis and by an immu cal method.[4] This has persisted after her recov e serious cellulitis of the chest wall. There has ema.

The skin edges about the area o were dark, cyanotic, and undermined. The s sue had the appearance of a carbuncle. T isolated on multiple cultures of smear sections of necrotic tissue was a nonhemo negative M. pyogenes var. aureus sensitive biotics used, as shown in the following tab

Drug	A
Chlortetracycline (Aureomycin)	
Erythromycin	5
Bacitracin	2 u
Chloramphenicol (Chloromycetin)	10 mc.
Dihydrostreptomycin	60 mcg.
Penicillin	10 units
Polymyxin	5 mcg.
Oxytetracycline (Terramycin)	10 mcg.

This organism was absent from the cultures several days before the progress of the lesion was arrested; however, the local application of antibiotics could have been responsible for these sterile cultures. Although the process was arrested before pre a lobulin could be procured, the patient's recovery was rapid after she received gamma globulin. Prior to receiving this, she had received whole blood and plasma, which supplied some gamma globulin. There is no evidence to support the hypothesis that this was an allergic phenomenon.

Although the mother of our patient had two near fatal postpartum infections over 40 years ago and "was saved only by the injection of immune serum" (believed to be a polyvalent immune horse serum), at the present time her albumin-globulin ratio and gamma globulin level are normal. Those of the patient's father and sisters are also essentially normal (see table). The patient's low gamma globulin level has persisted up to the present (see table). Her recovery after the extraction of an abscessed tooth was uneventful; however, she received gamma globulin and antibiotics prophylactically prior to the tooth extraction.

It is our opinion that the hypogammaglobulinemia played an important part and probably was responsible for our patient's remarkably poor resistance to her infection. The causative organism by sensitivity tests had little resistance to all of the antibiotics available, and the

*Differential Serum Protein Analyses**

	Chemical Analysis			Electrophoretic Analysis				
					Globulins			
	Total	Albumin	Globulin	Albumin	Alpha-1	Alpha-2	Beta	Gamma
N	6-7.5	3.5-5.5	2-3	3.5-4.3	0.3-0.5	0.55-0.85	0.8-1.2	0.75-1.2
	5.8	4.1	1.7	2.6	0.9	1.		0.3
	5.9	4.1	1.8	3.2	0.5	0		0.5
	7.1	5.3	1.8	4.5	0.4	7		0.3
	.8	4.4	2.4	4.0	0.2			1.0
	2	4.8	2.4	3.7	0.3			1.1
		5.9	2.1	5.5	0.2			0.7
		4.8	2.3	3.6	0.3			1.3

essed in grams per 100 ml.
by immunochemical meth r 100 ml.

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3. Bruton.[1a] Bruto
4. Gitlin, D.: Use uantitative Precipitin Rea

serum to 0.5 gm. per 100 ml. during the period of therapy with whole blood, plasma, and gamma globulin. It then returned to the patient's "normal" level of 0.3 gm. per 100 ml. The low albumin levels found electrophoretically during the illness apparently were an indication of the patient's poor nutritional state at that time; however, the amount of albumin present was always sufficient to prevent the occurrence of edema.

In January, 1954, three months after the patient's complete recovery, Dr. David Gitlin (Boston) determined the gamma globulin level in a sample of the patient's serum by his immunochemical method.[4] A value of 76 mg. per 100 ml. of serum was found, which Dr. Charles Janeway (Boston) states, in a personal communication, is "a very low level but considerably higher than the levels we have seen in children whom we feel have a congenital agammaglobulinemia." Janeway and others[1d] suggest that an absence of isohemagglutinins in the blood in patients of blood group O, A, or B may be used as a simple laboratory test on which to base a strong suspicion of the condition of agammaglobulinemia. Blood group B cells, suspended both in 30% bovine albumin and in isotonic sodium chloride, were used to test for the presence of antihemagglutinin (type B) in the patient's blood (type A); however, her serum was found to have a normal titer. Aside from a temporarily inverted albumin-globulin ratio, determined electrophoretically, which we ascribe to a poor nutritional state, the patient's liver profile was found to be essentially normal. Thus, this patient's hypogammaglobulinemia does not seem to be a reflection of faulty liver metabolism.

SUMMARY

The case of an adult female with a proved hypogammaglobulinemia and remarkably low resistance to a cellulitis caused by Micrococcus (Staphylococcus) pyogenes var. aureus is reported. The cellulitis did not respond to therapy until gamma globulin was added to the therapeutic attack. Since gamma globulin contains the immune bodies of the serum, more attention should be paid to this fraction in patients whose infections fail to respond to treatment.

ADDENDUM

On June 3, 1955, the patient's serum albumin-globulin ratio was determined by chemical analysis. Albumin was 5 gm. per 100 ml. and the globulin 1.5 gm. per 100 ml. Electrophoretic analysis of her serum revealed that a low gamma globulin level persisted. A modification of Kunkel's [5] zinc sulfate method for gamma globulin determination, which we now use as a screening test for hypogammaglobulinemia, revealed the presence of 0.2 gm. per 100 ml. (normal 0.8 to 1.2 gm. per 100 ml.).

670 N. Michigan Ave. (11) (Dr. Latimer).

5. Kunkel, H. G.; Ahrens, E. H., Jr., and Eisenmenger, W. J.: Application of Turbidimetric Methods for Estimation of Gamma Globulin and Total Lipid to the Study of Patients with Liver Disease, Gastroenterology 11: 499, 1948.

THYROID HYPERPLASIA IN YOUNG CHILDREN

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Thyroid enlargement in young children and infants has been seen in 10 cases received at the Armed Forces Institute of Pathology within the last two years. Cobaltous chloride and ferrous sulfate had been given in 5 of the 10 cases. Two recent communications, one by Gross, Kriss, and Spaet [1] and the other by Kriss, Carnes, and Gross,[2] described thyroid enlargement in a group of patients during the administration of cobaltous chloride for anemia and the regression of the goiter after the medication was discontinued. Even though the Armed Forces Institute of Pathology series is small, it seemed an appropriate one in which to compare the pathological changes in thyroids of children who had received cobalt with the changes in thyroids of others who had not received the drug. In the 10 children, enlargement of the thyroid was sometimes so marked that it interfered with breathing or caused death by suffocation. Five of the children were born prematurely. Lobectomy or tracheotomy was resorted to in some cases, and no attempt at surgical intervention was made in other cases in which death was due to suffocation.

Data for Ten Young Children with Thyroid Enlargement

Armed Forces Institute of Pathology No.	Gestation	Age at Operation or Autopsy	Duration of Cobalt Therapy, Mo.	State of Birth	Size, Cm., and Weight, Gm., of Thyroid
569886	2 mo. premature	14 days	None	Pennsylvania	5 × 3 × 3; 12
626435	1 mo. premature	4 mo.	None	Arizona	Not stated
639215	Full term	Stillborn	None	Georgia	4.5 × 3.5 × 2.5; 32
657409	Full term	20 mo.	4½	Kentucky	Size not stated; estimated 36
683183	Premature ? mo.	3½ mo.	3½	Michigan	5.5 × 3.5 × 3; 28
683323	Not stated	3 mo.	2½	Alabama	Not removed
685088	Estimated 3 mo.	3½ mo.	2 to 4	Texas	Size not stated; 21
691409	Full term	5 mo.	None	Indiana	4 × 6 × 2.5; 26
691947	Estimated 2½ mo.	3½ mo.	3	Indiana	Size not stated; 15
692313	Not stated	36 mo.	None	Texas	4 × 5 × 2.5; ?

From the Armed Forces Institute of Pathology.

The illustrations were supplied by the Armed Forces Institute of Pathology.

The one invariable pathological feature was marked, bilateral, uniform, and diffuse enlargement of the thyroid, which encircled the trachea. Microscopic examination revealed a striking similarity of altered thyroid architecture in all the cases. Hyperplasia was of such severity that a diagnosis of adenocarcinoma was considered by some examiners. Hyperplasia was found in all parts of the glands, and most of the follicles were obliterated. Rare round or oval follicles were present, but slit-like and sometimes branching spaces represented the few lumens that could be recognized. The cells lining the follicles were columnar, tall, and closely placed, and their bases appeared to rest on other cells rather than on a fibrous stroma. The slit-like follicles were almost always empty, but the periodic acid-Schiff reaction disclosed some rare intraluminal collections of homogeneous material considered to be colloid. In some cases the lumens were numerous and large, but almost always they were irregular in outline. Mitoses were not observed in most cases but were numerous in one. Subendothelial masses of hyperplastic thyroid cells were found in some cases. The subsidence of the thyroid swelling in the patients that lived and the absence of metastases in the autopsy cases dispel any idea of a malignant tumor.

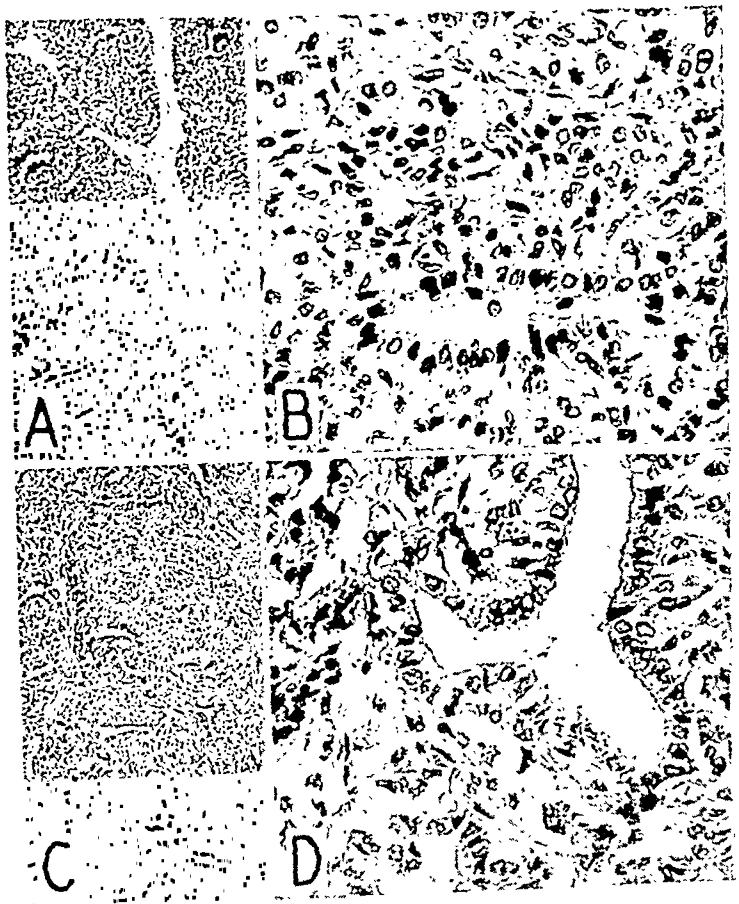

Fig. 1.—Photomicrographs of thyroid hyperplasia in premature infants who received cobaltous chloride: *A* and *B*, three and a half months and *C* and *D*, about three months. *A* and *C*, × 34.5. *B* and *D*, × 279.

Although all of the cases had similar pathological characteristics, it was surprising that five patients had received cobaltous chloride and ferrous sulfate and that five had not received this combination of drugs. The table shows pertinent data for these cases. Figure 1 shows photomicrographs of thyroid glands in cases in which cobalt was given. Figure 2 shows those in which the drug had not been used. On the basis of histological study of the thyroids it was not possible to differentiate between the patients who had and those who had not receiv cobalt. It should be pointed out that the same histologic picture of hyperplasia may result from many causes, a caution should be observed in ascribing the chang noted to any one etiological factor.

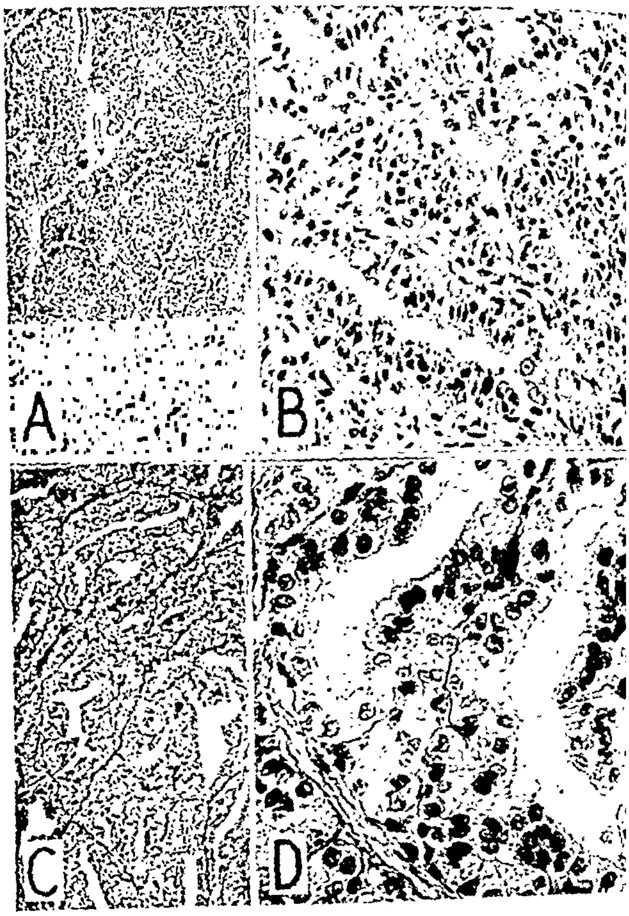

Fig. 2.—Photomicrographs of thyroid hyperplasia in infants who no cobalt. *A* and *B*, in a premature infant and *C* and *D*, in a infant. *A* and *C*, × 34.5. *B* and *D*, × 279.

SUMMARY AND CONCLUSIONS

In 10 cases of thyroid hyperplasia in childre children received cobaltous chloride and ferrous s On the basis of observations on a small num cases, the goitrogenic activity of cobalt cannot be lished. Further study of a larger series of cases i cated.

6825 16th St., N.W. (25).

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Fallacies and Misconceptions About Spectacles.—So m quieting myths are apt to circulate concerning the visual f not only among the lay public, but sometimes within profession, that it may be worth while to end with a few

It is almost impossible to damage the eyes by long reading and sewing, even if great fatigue is experience time.

Spectacles worn by mothers and nursemaids do *n children squint.*

Migraine is *not* due to refractive errors, and cannot by the provision of spectacles.

Most headaches are not due to eye trouble.

Myopia *cannot* be cured by orthoptic exercises, or by treatment, or indeed by any known method of therapy Doggart, M.D., Spectacles, *British Medical Journal,* 1953.

STUDIES ON IRON AND COBALT METABOLISM

Roy G. Holly, M.D., Omaha

Cobalt has been demonstrated to be effective in the tment of certain anemias.[1] In combination with iron, s of value in the treatment of anemia of prematurity l infancy.[2] Cobalt and iron have been found to be ctive in the prevention and treatment of most pregcy anemias.[3] In this article, it was stated that no toxic nifestations from cobalt therapy had been observed regnant women or their offspring. Because of current rest in cobalt toxicity, specifically, the possibility of alt inducing thyroid hyperplasia and hypothyroidism,[4] nplete investigations in animals and pregnant women to be reported.

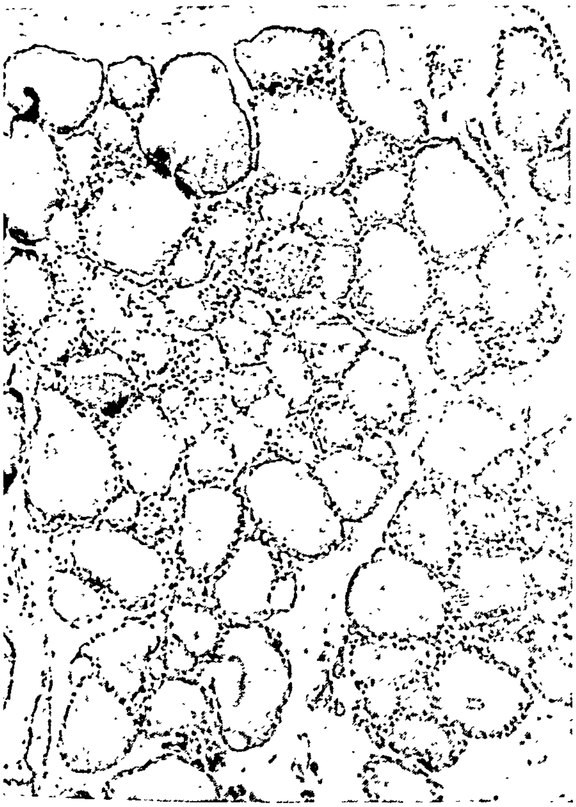

Fig. 1.—Photomicrograph showing normal rat thyroid (× 430).

METHOD

Observations on 78 pregnant women have been comted; 58 received cobalt and iron, and 20 received alt alone. The iron and cobalt preparation given to first group provided 60 to 90 mg. of cobaltous chloe with iron per day. The second group received 75 to 0 mg. of cobaltous chloride per day. Both groups reved the medication for a minimum of 90 days prior delivery. Some patients were treated for periods up to months. Hematological data on the patients receiving baltous chloride and iron have been reported.[3] Hemobin level, hematocrit, serum iron, and erythrocyte otoporphyrin determinations were done at four-week ervals during pregnancy and were repeated once in e puerperium. Tests for liver function included urine urobilinogen, feces urobilinogen, urine coproporphyrin, serum bilirubin, total lipids, thymol turbidity, and cephalin-cholesterol.

Twenty-six mature male white mice and 22 mature male rats bred from the Wistar strain were the subject of a separate investigation. Eight mice served as control (group M-1). Eight received propylthiouracil (group M-2), and 10 received cobaltous chloride (group M-3). The mice receiving propylthiouracil were given 0.2 mg. intraperitoneally daily for 10 days. The cobaltous chloride dose was 10 mg. per kilogram body weight given intraperitoneally daily for 10 days. As a test of thyroid function in the mouse, the closed vessel technique of Smith, Emmens, and Parkes [5] was used on the controls and treated groups.

Twenty-two male rats were divided into four groups. Three of the rats served as controls (group R-1); three received 10 mg. of cobaltous chloride per kilogram per day intraperitoneally for five and a half months (group R-2). Eight received 40 mg. of cobaltous chloride per kilogram per day orally for four months (group R-3), and eight received cobaltous chloride and ferrous sulfate equivalent to 40 mg. of cobaltous chloride and 200 mg.

TABLE 1.—*Summary of Animal Experiments*

Experiment No.	Animal	No. of Animals	Drug	Dose, Mg./Kg./Day	Route of Administration	Duration
M-1	Mouse	8	Control	..	....	....
M-2	Mouse	8	Propylthiouracil	0.2 mg./day	Intraperitoneal	10 days
M-3	Mouse	10	Cobaltous chloride	10	Intraperitoneal	10 days
R-1	Rat	3	Control	..	....	....
R-2	Rat	3	Cobaltous chloride	10	Intraperitoneal	5½ mo.
R-3	Rat	8	Cobaltous chloride	40	Oral	4 mo.
R-4	Rat	8	Cobaltous chloride + ferrous sulfate	40 200	Oral	4 mo.

Professor of Obstetrics and Gynecology, University of Nebraska College of Medicine.

Studies reported were aided in part by grants from Eli Lilly & Company, Indianapolis, and Lloyd Brothers, Inc., Cincinnati.

Roncovite, an iron-cobalt preparation, was supplied by Lloyd Brothers, Inc., Cincinnati.

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5. Smith, A. U.; Emmens, C. W., and Parkes, A. S.: Assay of Thyroidal Activity by a Closed Vessel Technique, J. Endocrinol. **5**: 186-206 (Nov.) 1947.

of ferrous sulfate per kilogram per day orally for four months (group R-4). These data are summarized in table 1. At the completion of the experiment, the animals were killed. Tissue from the thyroid, pituitary, brain, salivary gland, heart, lung, kidney, liver, adrenal, spleen, stomach, pancreas, and intestines was fixed, embedded, sectioned, and stained with hematoxylin and eosin for histological examination. The hemoglobin level and erythrocyte count were determined on blood from the tail with the animal partially under ether anesthesia. Determinations were done initially and at two-week intervals during the study. Techniques for the hemoglobin level, erythrocyte count, serum iron, and erythrocyte protoporphyrin determinations have been reported. The liver function studies were done by the hospital laboratories, University of Minnesota Hospitals.

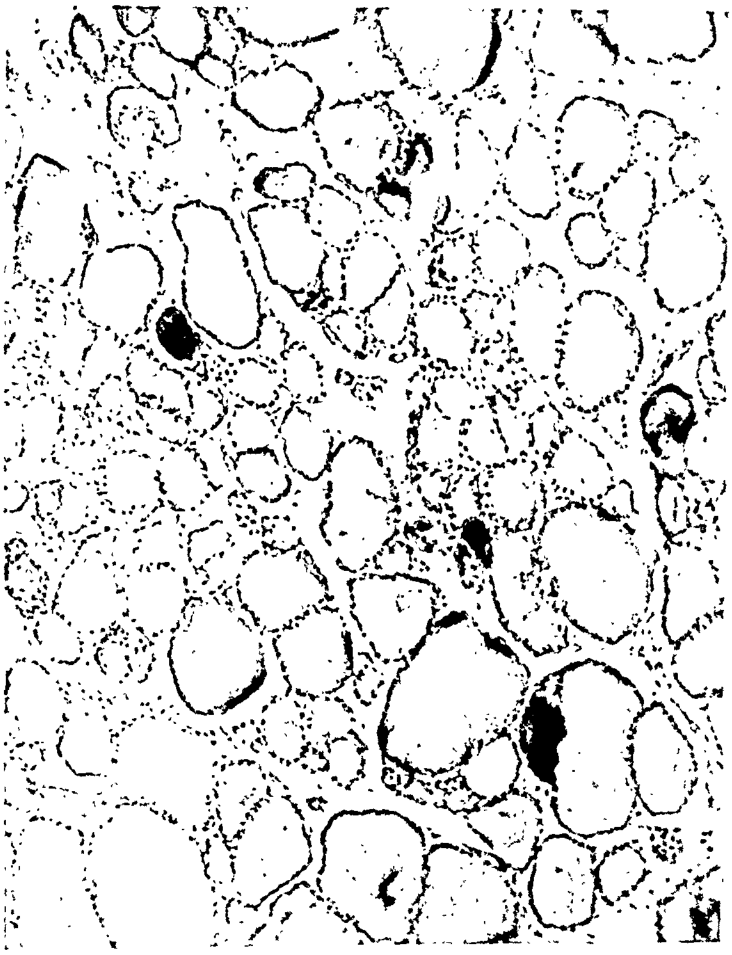

Fig. 2.—Photomicrograph showing thyroid from a rat that had received 10 mg. per kilogram per day of cobaltous chloride for five and a half months (× 430).

RESULTS

Hematological data on the patients and animals are shown in tables 2 and 3. In table 2, the blood findings from an additional 55 pregnant women who served as controls and 94 who received 1 gm. per day of an iron salt are included for comparison with those who were given cobalt alone or cobalt and iron. In those pregnant

women who served as controls, the reduction in hem
globin level and hematocrit was associated with a
crease in serum iron level and an increase in the eryth
cyte protoporphyrin. When the pregnant woman is giv
oral iron or iron and cobalt, the mean hemoglobin le
and hematocrit are maintained at or increased to
normal value. The serum iron level and erythrocyte pr
toporphyrin remain normal in the *majority* of pregn
women receiving iron or iron and cobalt. A comparis
of the control pregnancy group with those receiving i
or iron and cobalt emphasizes the need for supplemen
iron to prevent the exhaustion of maternal iron reserv

Cobaltous chloride without iron does not prevent
decrease in the hemoglobin level and hematocrit usua
found in pregnancy. As in the untreated group, the
crease in the hemoglobin level and hematocrit was as
ciated with a decrease in the mean serum iron level
an increase in the mean erythrocyte protoporphyrin
ues. *All of the women receiving* cobalt or cobalt and i
were judged to have normal pregnancies. Other tha
skin rash in one patient receiving cobalt and iron,
untoward symptoms from cobalt administration w
noted. No *thyroid* enlargement was noted in patients
ceiving cobalt. *Examination failed to disclose thyr*
enlargement in any of the *children born to mothers*
ceiving cobalt or cobalt and iron during pregnancy. Li
function studies were carried out on 11 of the won
receiving cobaltous chloride. Aside from the elevatior
the urine urobilinogen in four patients, the remainde
the results were within normal limits. The liver funct
studies on pregnant patients receiving cobaltous chlor
are shown in table 4.

The unique property of cobalt to stimulate eryth
poiesis is shown in the animal experiments (*table*
With adequate iron available, cobalt produced her
globin level and red blood cell values in excess of norn
values for the male rat. This is further confirmation
results reported by Stanley, Hopps, and Shideler[6]
others[7] to this effect. The closed vessel technique
measuring thyroid function in mice was felt to be
most suitable method for evaluating thyroid function
this animal. The mean minutes survival *time in the* cob
treated group *does not appear to be* significantly lon
than in the controls. The difference between the means
these two populations is not statistically significant at
degrees of freedom with fiducial limits at the 5% le
The mice receiving propylthiouracil had an increa
survival time, indicating suppression of thyroid functi
These data are summarized in table 5.

The only histological evidence of cobalt effect was se
in the renal tubules of some of the rats *receiving* excee
ingly high intraperitoneal doses *of cobalt*, far in excess
any comparable *oral dose given to human* beings. Sin
cobalt is excreted in the urine, this cellular damage w
not unexpected. A necrosis of the cells lining the ren
tubules was seen in *some of the* sections, but this chan
was not associated with any glomerular damage. The
was no evidence of any abnormality in thyroid archite
ture. All other tissues were histologically *normal* in a
pearance. Examples of the thyroid patterns from one co
trol animal and from an animal receiving the maximu
cobalt dose *are shown in figures* 1 and 2.

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COMMENT

The mechanism by which cobalt exerts its effect on ie hematopoietic system is not known. Hypotheses that obalt acts by direct anoxia of the bone marrow cells [8] r by an indirect tissue anoxia due to enzyme inhibition [1a] ave been convincingly discredited.[9] Cobalt is absorbed om the intestine and is excreted primarily by the kidney ıd to some extent in the bile. No serum cobalt level has er been demonstrated, except in individuals receiving balt. Human erythrocytes produced by cobalt stimula- on are normal in appearance and have been shown to ave a normal survival time when transfused into recip- nts.[10] Cobalt is therapeutically effective in many ane- ias; particularly those associated with hypoplastic or plastic bone marrow changes. Cobalt with iron has een shown to be effective in the treatment of the most equently seen anemia in pregnancy and in anemias of rematurity and infancy.[2] We have routinely adminis- red cobalt and iron in a clinic obstetric practice. Un- oubtedly, there is widespread usage over the country. he common anemia in pregnancy results from a defi- ency of iron. By administration of an iron salt, hemato- gical decreases in about 80% of pregnant patients can e prevented. The significant effect of cobalt combined ith iron is the maintenance of normal hematological alues in nearly 100% of the patients. Predelivery hemo- lobin level values of 13 to 14 gm. per 100 cc. occurred ore often in pregnant women receiving iron and cobalt han in those receiving an iron preparation alone. Cobalt as been found to be effective in the treatment of hypo- lastic anemia of pregnancy.

TABLE 2.—*Comparative Results of Cobalt and Iron on Hematological Values in Pregnancy*

			Pretreatment Values				Final Values (Predelivery)			
Group	No. of Cases	Dose	Hemoglobin Level, Gm./100 Cc.	Packed Cell Volume, %	Serum Iron, Mcg./100 Cc.	Erythrocyte Protoporphyrin, Mcg./100 Cc.	Hemoglobin Level, Gm./100 Cc.	Packed Cell Volume, %	Serum Iron, Mcg./100 Cc.	Erythrocyte Protoporphyrin, Mcg./100 Cc.
Control	55	....	12.3	38	93	43	11.4	35.5	55	60
Cobalt	20	75-100 mg./day	11.8	37.5	100	47	11.2	36	53	65
Iron salt	94	1 gm./day	12.2	37	96	39	12.9	39.5	105	43
Cobalt + Iron	58	60-90 mg./day 0.8-1.2 gm./day	12.2	38.5	110	42.5	13.1	41.5	114	44.5

Any substance of value in the treatment of disease nust necessarily be considered in the light of possible oxic effects. In spite of widespread use of cobalt and iron, o serious toxic manifestation has been reported, except hat observed by Kriss, Carnes, and Gross.[4] Minimal astrointestinal symptoms may occur in a small percent- ge of patients. An occasional patient may develop a skin ash, which promptly disappears when cobalt medication s discontinued. An excess of a heavy metal may result n liver damage. It is logical to study this organ for pos- ible cobalt toxicity. The battery of liver function studies on patients under cobalt therapy during pregnancy indicated that cobalt had no deleterious effect upon the liver. There is no way to interpret the elevated urine urobilinogen excretion values determined on four of the pregnant women, since pretreatment values were not obtained. Other equally sensitive tests were negative. The urobilinogen values outside the normal range probably were not significant. Rats maintained on an intraperitoneal dose of cobalt equivalent to 100 to 160 times a dose normally used in human therapy were found to have no abnormalities in their liver architecture. Hopps, Stanley, and Shideler arrived at a similar conclusion in their histopathological studies of rats receiving cobaltous chloride.[12] It is safe to assume on the basis of these animal experiments and the experience in human beings that cobalt does not produce liver disease.

Kriss, Carnes, and Gross [4] recently reported the occurrence of thyroid enlargement, thyroid hyperplasia, and hypothyroidism in children receiving cobalt. Thyroid function studies by means of radioactive iodine (I^{131}) uptake, protein bound iodine, and cholesterol determinations were a part of this report. Thyroid symptoms and laboratory findings returned to normal when cobalt was discontinued. Scattered references to similar thyroid enlargement attributed to cobalt administration have crept into the literature in recent months. Aside from one instance in the Kriss report, all examples of thyroid disturbance have occurred in children. The case of one adult, cited by Kriss, was that of a 55-year-old woman who died of myocardial infarction as a sequela to severe renal disease and hypertension. This woman had nitrogenous retention and had received hexamethonium. It seems unfair to implicate cobalt as solely responsible for the abnormal thyroid pattern observed at autopsy on this woman. Extensive investigations on animals and children have failed to confirm the findings reported by Kriss and others. Scott [13] has administered cobalt and cobalt and iron to rats in a dose sufficiently large to produce polycythemia. He concluded that cobalt had no effect on iodine metabolism. Thyroid I^{131} uptakes were normal in rats after prolonged cobalt administration. The I^{131}-bound hormone was normal in all phases of his investigation, indicating that the thyroid was trapping iodine, synthesizing thyroxin, and releasing it into the blood stream. The distribution of I^{131} was normal in all tissues.

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11. Deleted on proof.

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Jaimet and Thode[14] have been unable to demonstrate any thyroid enlargement or significant alteration of thyroid function in children after 9 or 10 weeks of cobalt administration. They varied the cobalt dosage to provide 1 to 6 mg. of cobaltous chloride per kilogram per day. The iodine uptake, conversion ratio, and saliva protein-bound iodine activity ratio were not affected by cobalt administration in these children. The children receiving 6 mg. per kilogram per day were receiving twice the amount of cobalt given by Kriss to the one control patient in whom thyroid enlargement was produced. Only the I^{131} uptake was reduced during the period of cobalt administration. The paradox of normal cholesterol and protein bound iodine values, associated with decreased radioactive iodine uptake, was observed in one other patient. The conclusion that cobalt produces thyroid hyperplasia and hypothyroidism scarcely seems justified on the basis of the Kriss investigation.

TABLE 3.—*Effect of Cobaltous Chloride on Hematological Values in Rats*

Experiment No.	No. of Animals	Dose, Mg./Kg./Day: Cobaltous Chloride	Dose, Mg./Kg./Day: Ferrous Sulfate *	Route of Administration	Mean Values: Hemoglobin Level, Gm./100 Cc.: Initial	Mean Values: Hemoglobin Level, Gm./100 Cc.: Final	Mean Values: Red Blood Cell Count, per Cu. Mm. × 10⁶: Initial	Mean Values: Red Blood Cell Count, per Cu. Mm. × 10⁶: Final
R-1	3	Control	...	.....	17.1	18.0	8.2	9.7
R-2	3	10	...	Intraperitoneal	16.3	30.4	6.8	15.3
R-3	8	40	...	Oral	16.1	24.7	8.3	11.7
R-4	8	40	200	Oral	16.4	23.4	8.1	12.8

* Rats were maintained on Purina Laboratory Chow. This diet contained 326 ppm of iron and presumably supplied adequate iron for hemoglobin synthesis in these experiments.

The animal investigations reported here, with those of Scott, would indicate that cobalt does not alter thyroid metabolism in the rat. While animal experiments cannot always be used as a basis for judging pharmacological action in the human being, it is generally recognized that the rat and mouse thyroid glands are more susceptible to goitrogenic agents than the human thyroid. Observations on pregnant women and the more detailed investigations on children receiving cobalt and iron would substanti the absence of any goitrogenic action on the part of cob Cobalt and cobalt and iron have been administered thousands of children and adults in the prevention treatment of anemia in the past decade. Probably more than a dozen examples of thyroid enlargement h been recorded. The coincident occurrence of thyr enlargement, with or without disturbance of thyroid fu tion, with cobalt administration could be explained m reasonably on the basis of a chance relationship, ra than any goitrogenic action of cobalt.

TABLE 4.—*Liver Function Tests* on Pregnant Patients Receiving Cobaltous Chloride*

Case No.	UU, Mg./Day	UC, Mcg./Day	FU, Mg./Day	SB, Mg./100 Cc.: 1 Min.	SB, Mg./100 Cc.: Total	TL, Units	TT, Units	CC
4	5.1	223	61	...	...	51	4	0
6	...	..	..	0.1	0.2	54	3	0
8	...	...	..	0.1	0.3	58	2	0
9	10.9	109	46	0.1	0.3	45	3	0
10	2.4	115	39	0.1	0.5	60	4	trace
12	...	...	..	0.1	0.1	..	..	..
13	0.3	122	31	...	...	..	..	..
14	5.2	199	..	0.1	0.3	57	4	0
15	2.0	88	97	...	...	..	..	..
16	1.1	44	79	...	...	..	..	..
17	5.9	127	55	0.1	0.2	60	6	0

* Normal range of values: UU—urine urobilinogen (1-3 mg./day), UC—urine coproporphyrin (40-275 mcg./day), FU—feces urobilinogen (40-280 mg./day), SB—serum bilirubin, TL—total lipids (18-70 units), TT—thymal turbidity (0-4 units), and CC—cephalin cholesterol (0-1+).

SUMMARY AND CONCLUSIONS

In an investigation on animals and pregnant wom a group of 55 normal pregnant women served as a trol. In this group, there was a decrease in the m hemoglobin level and hematocrit associated with a crease in the mean serum iron level and an increas the mean erythrocyte protoporphyrin. A second g of 94 pregnant women was given an iron suppleme their diet. A third group of 58 pregnant women rece an iron and cobalt preparation. A supplement of iro iron and cobalt effectively prevented any reduction i mean hemoglobin level and hematocrit during pregn A fourth group of 20 pregnant women received onl baltous chloride, which did not prevent a decrea hemoglobin level and hematocrit.

TABLE 5.—*Comparative Effect of Intraperitoneally-Adminis Cobaltous Chloride and Propylthiouracil on Thyroi Function in Mice**

Experiment No.	Drug	Dose	Mean Survival Time, Min.	Mea Survi Ti Min./ Body
M-1	Control	....	101	5 ±
M-3	Cobaltous chloride	10 mg./kg./day	117	5.8 ±
M-2	Propylthiouracil	0.2 mg./day	161	8.2 ±

* By technique of Smith, Emmens, and Parkes.[5]

There were no toxic manifestations following c administration to 78 pregnant women. All childre sulting from these pregnancies were found to be no A small percentage of patients complained of ga intestinal intolerance. A skin rash, observed in woman under cobalt therapy, disappeared when cobalt was discontinued. Liver function studies essentially normal in 11 pregnant patients receivin balt. The thyroid gland was not enlarged in any o group. While propylthiouracil was observed to sup thyroid function in mice, the administration of doses of cobaltous chloride had no effect. Significa creases in the mean hemoglobin level and erythr values were observed in rats fed cobalt or cobalt iron. No demonstrable histological change was obse in the thyroid glands of these rats. All organs and ti examined were normal with the exception of the ki Renal tubular necrosis was seen only in some of animals receiving exceedingly high intraperitoneal of cobalt. The administration of cobalt or cobalt iron to mice, rats, and pregnant women did not res goiter formation.

42nd Street and Dewey Avenue (5).

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[14] Jaimet, C. H., and Thode, H. G.: Personal communication to the author.

THYROID FUNCTION STUDIES ON CHILDREN RECEIVING COBALT THERAPY

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Gross, Kriss, and Spaet,[1] in 1954, reported that thy- oid hyperplasia and goiter had developed in several ildren receiving an experimental cobaltous chloride reparation. Details of what appear to be the same cases ave more recently been reported by Kriss and co- orkers.[2] Although premedication values were deter- ined in only a single case, thyroid function studies led em to conclude that suppression of thyroid function ue to cobalt was the primary cause of hyperplasia and onsequent goiter formation. Also, biochemical studies f Kirkwood and Fawcett [3] in this university indicate at the activity of the thyroid enzyme tyrosine iodinase inhibited in a cell-free thyroid homogenate by cobalt 10^{-6} M concentrations.

Antithyroid agents generally are effective in animals,[4] d their potency can usually be established promptly the effect of single doses on the thyroid function test human beings.[5] However, Kriss [2] and others [6] report at cobalt meets neither of these criteria. Previous work ported from our laboratories [7] has dealt with the iodine ycle in human beings and with the use of saliva protein- ound iodine activity ratios as a sensitive, reliable indi- ator of thyroid function and of the hypothyroid state in articular. Because of our interest in this field, as well as the use of cobalt-iron therapy in anemia, we thought it esirable to investigate further the antithyroid effect as- ribed to cobalt by Kriss and co-workers.[2]

TABLE 1.—*Results of Thyroid Function Studies in Patients Receiving Interrupted Cobalt-Iron Therapy (24 Hr. Values Following 50 μc Tracer Dose of I^{131})*

		I^{131} Uptake, %				Conversion Ratio				Saliva Protein-Bound Iodine Activity Ratio			
Case No.	Cobaltous Chloride, Mg./Kg.	Pre-therapy	After 5 Wk. Therapy	After 10 Wk. Therapy *	After 14 Wk. Therapy †	Pre-therapy	After 5 Wk. Therapy	After 10 Wk. Therapy *	After 14 Wk. Therapy †	Pre-therapy	After 5 Wk. Therapy	After 10 Wk. Therapy *	After 14 Wk. Therapy †
16	6	24	7	45	35	8	8	11	40	160	1,946	172	113
17	6	23	7	25	34	20	2	16	30	250	276	170	53
18 ‡	6	50	26	22	..	54	20	12	..	24	94	168	..

* Last 5 weeks without therapy.
† Five weeks with therapy; 5 weeks without; last 4 weeks with therapy.
‡ Pretherapy I^{131} tests were for some unknown reason above normal. The subsequent post-therapy normal levels do not, therefore, justify any nclusion one way or the other regarding effect of cobalt, and tests on this patient were discontinued.

METHODS AND MATERIALS

Preliminary thyroid function studies and careful clin- cal examinations were carried out on a group of 18 chil- lren, aged 5 to 9. Ten were male, and eight were female. Details of the radioactive iodine uptake, conversion atio, and saliva protein-bound iodine activity ratio echniques used have been reported.[8] The inclusion of he latter procedure seemed especially desirable since we have shown it to be relatively more accurate in de- tecting the hypothyroid state.[7a] The tracer dose of 50 μc of radioactive iodine (I^{131}) was administered to all of the children on the same evening. Iodine uptake studies were made with Geiger and scintillation counters 24 hours later, and blood and saliva samples were taken for the other determinations. It was felt that the uniformity of the group procedure might eliminate possible causes of variation in the test results.

On the day following the preliminary function tests, medication with a liquid cobalt-iron preparation was begun. Dosage was so adjusted that four of the children received 1 mg. of cobaltous chloride per kilogram of body weight per day, five received 2 mg. per kilogram, four received 4 mg. per kilogram, and five received 6 mg. per kilogram. The treatment was given once, twice, three times, and four times a day respectively. These doses were chosen because they are representative of the range of dosage that might be expected when the commercial product is used according to the directions supplied and because the dosage reported by Kriss and co-workers [2] in their single "controlled case" was at the median of our dosage range. Furthermore, the maximum dose used by us has previously been indicated to be safe for use in children.[9]

Five weeks and again 10 weeks after therapy was begun, the battery of function tests was performed as described above with the same precautions as to group procedure. One patient (case 18) was dropped from the study because pretherapy I^{131} tests were, for some unknown reason, above normal. The subsequent post-therapy normal levels do not therefore justify any conclusions one way or the other regarding effect of cobalt.

From Hamilton College, McMaster University.

The cobalt-iron preparation used in this study was supplied as Roncovite drops by Lloyd Brothers, Inc., Cincinnati.

S. Nablo, Alex Harrison, Harold Amy, and Mary Evel gave technical assistance.

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After the five-week period, therapy was discontinued in two of the patients receiving the 6 mg. per kilogram dosage. These two patients (cases 16 and 17), whose tests are shown separately in table 1, showed a sharp depression of thyroid function according to the I^{131} studies. They did not then nor subsequently exhibit any goiter or any signs or symptoms of hypothyroidism. They were, and are, in fact healthy and asymptomatic. After due consideration it was decided to discontinue cobalt therapy, repeat I^{131} tests in another month, and then, if tests were normal again (as they were), reinstitute cobalt therapy for another four-week period. Final assessment showed no added fall in thyroid function. We do not offer any suggestion as to why these two children showed this reaction, but obviously cobalt was not suppressing on the second course, and, if anything, they were handling iodine and making thyroxin better at the last than before cobalt therapy. The administration of cobalt therefore covered a period of 10 weeks in all patients. During this time, the children lived together in an institution under similar living conditions, with similar diet and with administration of the medicament supervised by an attending nurse. This eliminated the possibility of irregular administration. Frequent clinical examinations were carried out with particular attention to the thyroid gland, and no change in their healthy state was observed. Hemoglobin level determinations were done by standard methods, samples being taken at the time the thyroid function studies were done.

TABLE 2.—*Results of Thyroid Function Studies in Patients Receiving Cobalt-Iron Therapy (24 Hr. Values Following 50 μc Tracer Dose of* I^{131}*)*

Case No.	Cobaltous Chloride, Mg./Kg.	I^{131} Uptake, %			Conversion Ratio			Saliva Protein-Bound Iodine Activity Ratio		
		Pre-therapy	After 5 Wk. Therapy	After 10 Wk. Therapy	Pre-therapy	After 5 Wk. Therapy	After 10 Wk. Therapy	Pre-therapy	After 5 Wk. Therapy	After 10 Wk. Therapy
1	1	39	34	33	33	25	17	88	136	189
2	1	32	46	43	44	29	30	43	70	48
3	1	31	24	25	32	28	30	47	72	47
4	1	21	38	34	26	49	43	17	11	15
5	2	19	33	31	28	19	20	100	103	109
6	2	10	19	21	12	17	13	154	152	242
7	2	32	28	35	26	16	26	120	140	65
8	2	33	30	24	32	17	27	37	102	30
9	2	51	38	34	32	30	24	16	31	25
10	4	35	24	24	32	18	23	23	46	36
11	4	24	27	29	24	27	20	44	41	71
12	4	30	33	26	20	21	18	·92	112	100
13	4	41	32	28	42	30	35	58	58	88
14	6	27	22	18	16	33	19	138	60	130
15	6	43	43	30	38	63	31	34	19	55
Average	..	31	31	29	29	28	25	67	77	83

RESULTS

Results of all three thyroid function studies are shown in tables 1 and 2. In none of the children was there any approach toward hypothyroidism, and even casual inspection shows the lack of significant variation over this extended period. It would appear that cobalt was completely without effect on thyroid function in these cases. In no instance were gastrointestinal side-effects seen from the medication. No clinical signs of hypothyroidism were seen at any time, nor was there any clinical evidence of thyroid enlargement at any time in any patient. In fact, the children and their supervisors all remarked on their sense of well-being throughout therapy. Hemoglobin level findings are shown in table 3. Since iron deficiency may be assumed to have been present in several of the patients, the increases that appear are those to have been expected. No conclusions, of course, could be drawn from this work as to the relative merit of cobalt-iron and cobalt alone. The figures are included, however, because Kriss [2] had reported a sharp fall in hemoglobin level values coincidental with goiter formation in patients receiving cobalt.

COMMENT

In the single case of sickle cell anemia reported by Kriss and co-workers,[2] in which thyroid function studies were done prior to and during therapy with cobaltous chloride, a very pronounced fall in iodine uptake to 2% was reported after nine weeks of therapy at a dosage of 3 mg. of cobaltous chloride per kilogram per day. A goiter designated as 2+ was reported to have de-

TABLE 3.—*Hemoglobin Level Determinations in Patients Receiving Cobalt-Iron Preparation*

Case No.	Cobaltous Chloride, Mg./Kg./Day	Hemoglobin Level, Gm./100 Cc.		
		Pre-therapy	After 5 Wk. Therapy	After 9-10 Wk. Therapy
1	1	11.9	12.6	12.5
2	1	14.9	14.0	14.6
3	1	12.6	12.0	12.7
4	1	11.2	11.2	12.0
5	2	11.9	12.4	13.0
6	2	13.4	14.0	14.3
7	2	12.2	12.6	12.7
8	2	12.6	13.3	13.1
9	2	11.9	12.2	12.4
10	4	12.9	13.6	14.5
11	4	12.6	14.0	13.2
12	4	13.6	13.4	13.3
13	4	13.6	13.6	14.0
14	6	12.2	12.4	13.0
15	6	12.8	12.9	13.8
Average	..	12.7	12.9	13.3

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veloped. Since these authors were able to demonstrate this result in a case selected at random, it would be unlikely that it presented a coincidental idiosyncrasy. In our series of 17 cases, we could find neither such change in function nor development of goiter. We therefore could not confirm the findings of Kriss and co-workers [2] in any way, even at dosage levels twice as great as used by them. Several explanations appear to be possible. First, none of our patients had sickle cell anemia, whereas Kriss and co-workers [2] drew their conclusions concerning hypothyroidism solely from children with this disease. However, other studies [10] with cobalt in patients with sickle cell anemia have likewise failed to confirm their results. Since cobaltous chloride is not an official drug, specifications for medicinal quality are not available, and it is possible, of course, that variations in the quality of the drug could be responsible for the findings of Kriss. The presence of toxic impurities in some samples of commercially available cobaltous chloride have been reported.[11]

SUMMARY AND CONCLUSIONS

The administration of a cobalt-iron preparation in a dosage providing 1, 2, 4, and 6 mg. of cobaltous chloride per kilogram of body weight daily for 10 weeks caused no significant change in thyroid function in 17 children. Function studies included radioactive iodine uptake, conversion ratio, and saliva protein-bound iodine activity ratio determinations. No thyroid enlargement occurred in any of the cases; clinical hypothyroidism did not develop. The results indicate that cobalt used in amounts up to 6 mg. per kilogram per day for 10 weeks does not affect any phase of thyroid function as measured by our radioactive iodine tests and has no goitrogenic action. Since cobalt, in vitro, in cell-free homogenates has been shown by Kirkwood and Fawcett [3] to inhibit tyrosine iodinase, the complete lack of antithyroid effect of cobalt in our experiments suggests that cobalt does not permeate the cells of the thyroid gland in vivo to a sufficient extent to affect gland function. Our results, of course, do not preclude the possibility of a rare idiosyncrasy or the possibility of some disease that would raise the cells of the thyroid to a state permeable to cobalt.

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COBALTOUS CHLORIDE AND IODINE METABOLISM OF NORMAL AND TUMOR-BEARING RATS

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Earlier studies have shown that transmissible tumors in rats and mice cause an alteration in the metabolism of radioactive iodine (I^{131}) and I^{131}-labeled compounds.[1] Animals bearing various transmissible tumors stored more I^{131} in their tissues than the controls. Additional studies upon this phenomenon showed the increased I^{131} uptake to be a local reaction at first. In the case of subcutaneous tumor implants, increased I^{131} uptake was observed only in the skin adjacent to the tumor. As the growing tumor exceeded a size of about 100 mg. the entire skin organ of the host became involved and took up more I^{131} than the controls.[2] As the tumor process proceeds, the iodide trapping by the tissues of the host increases to the extent that the excretion of iodide is markedly reduced. The extra thyroidal trapping of I^{131} interferes with thyroid function. The relationship between iodide trapping and tumor implant survival was established when it was shown that tumor implants in nonsusceptible rats did not elicit the iodide-trapping reaction even though they grew from 0.2 to 1.0 gm. prior to regression.[3]

In our efforts to screen agents that might block the undesirable trapping of iodide, which appears to be beneficial to the malignant process, attention was drawn to the in vitro studies of Kirkwood and Fawcett, in which they have shown that cobalt can inhibit such enzymes as iodotyrosinase.[4] It seemed desirable to investigate the effect of feeding cobalt to tumor-bearing animals since a polypeptide has been separated from tumor tissue that is associated with large amounts of free tyrosine and that binds I^{131}.

METHODS

Five young female Slonaker rats were used in each of the groups described below. Two groups were given cobaltous chloride and two groups given cobaltous chloride plus ferrous sulfate in their drinking water. One group given distilled water served as a control. All five groups were maintained on the above schedule for 44 days before they were killed. Thirteen days prior to the killing,

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Lloyd Brothers, Inc., Cincinnati, supplied the cobaltous chloride and the ferrous sulfate used in this study.

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4. Kirkwood, D. M., and Fawcett, F.: Personal communication to the authors.

animals in group 1 (cobaltous chloride), group 3 (control), and group 4 (cobaltous chloride plus ferrous sulfate) received a tumor implant in each flank; this was a sarcoma that grows in the "ascites" form and enables uniform implants of 4.9 × 10⁶ cells to be administered to each rat. Sixty-six hours prior to the killing, a tracer dose of I^{131} was given to all groups, thus tagging the iodide pool of the animals. The presence of this radioactive tag made it possible to quantitate the conversion of the inert iodide pool into organically bound iodine as well as to study the complexing of iodide resulting from the tumor process. The release of protein-bound iodide to the blood stream of the rats was measured using an anionic exchange resin.[5] Selection of a 66-hour interval between I^{131} administration and sacrifice allowed ample time for the synthesis and release of thyroxin, and in part, reflected its rate of utilization. The tissues and excreta obtained were assayed for I^{131} with a scintillation counter.

TABLE 1.—*Results of Cobalt Administration on Normal and Tumor-Bearing Rats*

	Group				
	1	2	3	4	5
	Cobaltous Chloride	Cobaltous Chloride	Distilled Water	Cobaltous Chloride + Ferrous Sulfate	Cobaltous Chloride + Ferrous Sulfate
	Tumor	Tumor Control	Cobalt Control	Tumor	Tumor Control
Av. daily water consumption, cc.	15.3	14.8	16.7	12.9	13.7
Av. daily intake cobalt, mg.	4.0	3.8	....	3.3	3.6
Av. daily intake iron, mg.	....	....	....	4.9	5.5
Packed cell volume	63.8 ± 2.2	56.6 ± 1.28	43.6 ± 1.75	61.6 ± 2.5	62.0 ± 1.59
Tumor weight	3.01 ± 0.186	....	4.49 ± 0.76	3.09 ± 0.31	....
Animal weight					
Beginning	128 ± 1.6	110 ± 1.6	117 ± 2.6	109 ± 4.0	96 ± 4.7
End	156 ± 3.2	163 ± 6.8	164 ± 1.7	157 ± 7.4	144 ± 7.8
% of original body weight	122	148	140	144	150

TABLE 2.—*Metabolism of Iodine in Normal and Tumor-Bearing Slonaker Rats* *

	Group				
	1	2	3	4	5
	Cobaltous Chloride	Cobaltous Chloride	Distilled Water	Cobaltous Chloride + Ferrous Sulfate	Cobaltous Chloride + Ferrous Sulfate
	Tumor	Tumor Control	Cobalt Control	Tumor	Tumor Control
Gastrointestinal tract, % per organ	1.40 ± 0.755 †	0.77 ± 0.126 †	1.71 ± 0.75 †	1.95 ± 0.79 †	0.72 ± 0.084
Skin, % per gm. wet weight	0.21 ± 0.049	0.11 ± 0.021	0.18 ± 0.030	0.18 ± 0.049	0.12 ± 0.104
Thyroid, % per organ	16.9 ± 3.33	4.56 ± 0.311	9.1 ± 1.60	13.4 ± 2.61	7.68 ± 1.25
Tumor, % per gm. wet weight	0.054 ± 0.015	.....	0.024 ± 0.007	0.047 ± 0.016	.....
Plasma, % per ml.	0.073	0.067	0.037	0.060	0.041
Bound hormone in plasma, % per ml.	0.017	0.020	0.015	0.013	0.021
Plasma iodide, % per ml.	0.055	0.047	0.012	0.047	0.020
Balance of animal, % per gm. wet weight	0.07	0.03	0.09	0.06	0.03
Urine, % per gm. wet weight	55.1	80.7	73.0	60.9	77.0
Feces, % per gm. wet weight	1.7	5.0	5.0	4.9	5.7

* Compounds given in drinking water for 44 days prior to I^{131} administration. The rats were killed 66 hours after I^{131} administration.

† Values are means ± standard error $= \sqrt{\frac{\Sigma \text{dev}^2}{(n)(n-1)}}$

RESULTS

The average daily water intake, body weights, packed cell volumes, and cobalt and cobalt plus iron intakes are presented in table 1 for comparison with controls. No appreciable difference in water intake was observed. The animals appeared to tolerate the cobalt well at the dosage level used. All of the rats gained weight at a normal rate. As was expected from the observation of Anderson and others[6] the animals receiving cobalt or cobalt plus iron had a polycythemia that is reflected in a larger than normal packed cell volume. The animals receiving cobalt and cobalt plus iron had tumors that weighed 67 and 70% of the controls. Cobalt or cobalt plus iron feeding significantly reduced tumor growth. P was less than 0.01 for both groups, when they were compared to their controls.

The uptake of I^{131} by the thyroids of all five groups of rats fell within normal limits. The greater than normal thyroid uptake by the tumor-bearing animals is typical for this time period because the maximal uptake is attained at a later time than the normals. These data are presented in table 2 with the I^{131} content of the other specimens measured. The greater than normal I^{131} content of the tissues of the tumor-bearing rats is typical for the time period selected after I^{131} administration and is due to the malignant process. The increased uptake is presumably due to the iodide-binding action of the tumor polypeptide, which has been demonstrated in human, mouse, and rat tumors.[2] All groups of rats had detectable amounts of I^{131} in their plasma. From 23 to 51% of the total I^{131} was present as protein bound iodine. No significant difference was observed between protein bound I^{131} in plasma of the cobalt-treated animals and their controls. The rats receiving cobalt retained more of the I^{131}

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tag in the tumor tissue than their controls. This effect has not been explained. Further studies are in progress in order to investigate this difference.

COMMENT

Within the scope of their limitations, these studies confirm those of others,[6] indicating that the administration of cobalt or cobalt plus iron is capable of stimulating hematopoiesis in the rat to a significant degree. In addition this regimen inhibited tumor growth significantly, although the results were not dramatic. No inhibition of I^{131} thyroid uptake, thyroxin synthesis, hormone release, or circulating hormone levels were observed following cobalt feeding. Owing to the fact that the growth of the young rats in the several groups described was well within normal limits for this strain of rat, it must be concluded that hormone utilization was essentially normal. Comparative studies upon thyroidectomized rats of the same strain in this laboratory indicate that adequate thyroid tissue is essential for normal growth.[7] It has also been observed by Levine and co-workers [8] that inadequate iodide diets cause young rats to develop severe goiter in four to five weeks. No evidence of goiter was observed in the cobalt-treated animals at the time of killing.

SUMMARY

The addition of cobaltous chloride to the drinking water of rats in order to maintain a daily intake of 60 mg. per kilogram of body weight had no appreciable effect on their iodine metabolism. Similar results were obtained with a mixture of cobaltous chloride (60 mg. per kilogram) and ferrous sulfate (57 mg. per kilogram). At the dosage levels described above, a pronounced polycythemia was observed after 44 days of cobalt administration. No deleterious effect was observed upon thyroid function or growth. The administration of cobaltous chloride at the dosages used in this study significantly retarded the growth of a transmissible fibrosarcoma.

[7] Scott, K. G.: Unpublished data.

[8] Levine, H.; Remington, R. E., and von Kolnitz, H.: Studies on the Relation of Diet to Goiter: Dietary Technic for Study of Goiter in Rat, J. Nutrition 6: 325-345 (July) 1933.

ALIEN INTERNS AND RESIDENTS IN THE UNITED STATES

James E. McCormack, M.D.
and
Arthur Feraru, D. en D. de L. U. (Lyons), New York

For the past several years various agencies have been interested in evaluating the status of physicians trained abroad who have come to this country either as *émigrés* or as temporary visitors in search of further training. Several statistical studies have been reported that indicate that the number of foreign-trained physicians occupying house officer positions is increasing. For the year 1953-1954, estimates ranged between 5,500 [1] and 6,000 [2] such physicians, who constitute between one-fifth and one-fourth of the total interns and residents on duty in the hospitals of this country.

NONIMMIGRANT PHYSICIANS

In the earlier reports referred to, it was not feasible to separate immigrant physicians from those foreign-trained physicians who were here on nonimmigrant visas for a limited period of hospital training. Furthermore, it has not always been possible to be sure that collected data omit duplications. One of the difficulties experienced by many hospitals in arranging a training program is the tendency for alien physicians to arrive at odd times to begin training, whereas the average American intern or resident starts his period of service on July 1 or Jan. 1. Furthermore, as hospital administrators know, certain alien physicians have been known to move from one hospital to another with little regard to whether there had been an obvious or implied commitment to stay for a full year. Thus it is conceivable that a small amount of duplication entered into the earlier studies in instances where such a physician left one hospital after that hospital had completed an annual questionnaire and arrived at a second hospital in time to be included in its listing because the second hospital was somewhat late in completing the same questionnaire. The present study, which was conducted by the Institute of International Education with the cooperation of the American Medical Association, was designed to eliminate any duplication and to omit foreign-born interns and residents who are in this country as immigrants. The instructions accompanying the inquiry requested that there be included only interns and residents who have both foreign citizenship and permanent residence in a foreign country. All others, such as displaced persons who might be in hospital positions, are omitted. To be more specific, hospitals were instructed to omit: (1) persons from Alaska, the Hawaiian Islands, Puerto Rico, the Virgin Islands, Guam, or other United States territories; (2) displaced persons resettled permanently in the United States; and (3) foreign citizens who have immigrated to the United States for permanent residence.

It is entirely possible that some of the aliens in this study may eventually acquire immigrant status; however, so far as we are able to tell, only persons who are by definition true aliens are included. If this report were in any way intended to evaluate medical education one would prefer not to include Canadians, since Canadian medical education is in all instances similar to American. Furthermore, like other Americans, we find it difficult to think of our Canadian colleagues as in any sense

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[1] Diehl, H. S.; Crosby, E. L., and Kaetzel, P. K.: Alien Physicians Training in Hospitals in the United States, J. A. M. A. 156: 1 (Sept. 4) 1954.

[2] McCormack, J. E.: The Problem of the Foreign Physician, J. A. M. A. 155: 818 (June 26) 1954.

alien; however, we do not know the medical schools attended by the individuals included in the study, and it is possible that some of the house officers listed as citizens of Canada had previously lived and studied in other countries abroad. In September, 1954, an inquiry was sent to all the hospitals approved by the American Medical Association for intern or resident training. A follow-up communication was sent in November. Replies were received from 90% of the hospitals to which the communication had been sent.

In order to estimate the completeness of the returns, the names of the physicians brought to this country in 1954-1955 by the Ventnor Foundation were checked against our returns. Of 63 persons on the foundation list who were in this country at the time of our survey, 57 were identified in our data. This is one indication of the degree to which our data are complete. The Ventnor Foundation sponsors one of the most carefully supervised programs that has come to our attention. Initiated by Dr. and Mrs. Hilton S. Read of Atlantic City, N. J., this effort brings to this country for a period of hospital training young German medical graduates who are carefully screened, have high scholastic records, and are proficient in English. Obviously our returns are not complete, but they are reported for what they may be worth and for evaluation in relation to other studies so that eventually all concerned may have a clearer picture of the status and the trends in the training of foreign-born physicians who may come to this country.

TABLE 1.—*Alien Physicians Training in Approved Hospitals in the United States, 1954-1955, by States and Territories*

Location of Hospital	Total No. of Doctors	Location of Hospital	Total No. of Doctors
Alabama	12	New Jersey	348
Arizona	42	New Mexico	..
Arkansas	5	New York	1,186
California	160	North Carolina	51
Colorado	51	North Dakota	3
Connecticut	109	Ohio	424
Delaware	16	Oklahoma	14
District of Columbia	124	Oregon	6
Florida	32	Pennsylvania	262
Georgia	31	Rhode Island	23
Idaho	..	South Carolina	5
Illinois	396	South Dakota	10
Indiana	17	Tennessee	53
Iowa	61	Texas	122
Kansas	63	Utah	19
Kentucky	40	Vermont	9
Louisiana	25	Virginia	63
Maine	3	Washington	29
Maryland	172	West Virginia	44
Massachusetts	405	Wisconsin	58
Michigan	181	Wyoming	..
Minnesota	110		
Mississippi	1	Puerto Rico	1
Missouri	216	Hawaii	22
Montana	..	Alaska	..
Nebraska	4	Canal Zone	5
Nevada	..		
New Hampshire	..	Total	5,036

Numbers.—The questionnaire was sent to the 1,315 hospitals listed by the Council on Medical Education and Hospitals as approved for internship or residencies or both. Replies were received from 1,177 (89.5%), of which 743 were positive and 434 negative. Thus, at least 56.5% of the approved hospitals are known to have aliens on the house staff, and 33% report no aliens.
Of the group of hospitals reporting, 63% have alien
terns or residents. Some of those reporting no al
may have immigrants on the house staff, but this re
is not concerned with immigrants. Incidentally, it
reported at the Congress on Medical Education
Licensure in Chicago in February, 1955, that a small
definite proportion of alien physicians are in hosp
not included in the approved list of the American M
cal Association employed in the present study.

The data indicate that for the current year 1954-1
there are at least 5,036 alien physicians in training in
proved hospitals (4,416 males and 620 females). T
are 1,761 interns, of whom 1,528 are male and 23
male; there are 3,275 residents, of whom 2,888 are
and 387 female. Females constitute 12.3% of the g
(13.2% of interns and 11.8% of residents), whe
females constituted from 5.2 to 5.7% of the graduat
American medical schools during the three years 1
through 1954. The percentage of females was sig
cantly higher among the house officers who had c
from the following countries: China 21%, India 1
Greece 18%, Korea 25%, Philippines 25%, Ur
Kingdom 28%. Of all the females, both interns
residents, 57% came from the Near, Far, and Mi
East, the Philippines contributing the greatest num

Fields of Study.—Among residents there were
ported no less than 33 different titles of specialtie
fields of study. The 10 most frequent were, in or
general surgery, general medicine, obstetrics and
ecology, pediatrics, pathology, psychiatry, anesthe
ogy, internal medicine, radiology, and otolaryngol
Comparison with the relative number of approved
dencies in the various specialties in this country i
cates no particular pattern of interest; however,
number of aliens training in the following specialti
relatively high in relation to the number of appr
residencies in these specialties: thoracic surgery, tu
culosis and pulmonary disease, plastic surgery, ne
surgery, otolaryngology, and anesthesiology. It woul
unwarranted to draw many conclusions from this
observation, since the relationship is drawn with
number of approved residencies rather than with
number of such residencies occupied.

Distribution.—A small number of these physic
(28) are in seven hospitals outside the continental Un
States (five in Hawaii and one each in Puerto Rico
the Canal Zone). Hospitals in these areas are inclu
in the American Medical Association list. The numl
involved are so small as not to affect the results, but t
are included for completeness and for valid compari
with future studies that may be based on the listing
hospitals approved for the training of interns and r
dents published annually in THE JOURNAL.

Table 1 indicates that 42 states and the District
Columbia reported the presence of alien house offic
and only 6 states did not report any: Idaho, Monta
Nevada, New Hampshire, New Mexico, and Wyomi
of these, Idaho, Nevada, and Wyoming have no
proved internships or residencies, and the others ha
only a few approved residencies. The 10 states hav
the largest numbers were New York 1,186, Ohio 4
Massachusetts 405, Illinois 396, New Jersey 348, Pe

sylvania 262, Missouri 216, Michigan 184, Maryland 172, and California 160. This is in accord with the pattern in previous studies.

Origin and Sponsorship.—These visitors came from 83 different countries as indicated in table 2. There are included 1,983 from 22 countries in the Far, Near, and Middle East; 1,229 from 28 European countries; 297 from 4 Caribbean countries; 909 from the Latin American mainland, including Mexico, 7 Central American countries, and 11 South American countries; 520 from Canada; and 54 from 8 African countries. The 12 countries having the largest representation are: Philippines 776, Canada 520, Mexico 425, Germany 323, Turkey 253, Italy 242, Cuba 184, China 170, India 165, Korea 151, Greece 144, and Japan 139.

An effort was made to determine under what sponsorship these individuals had come to this country. There were at least 67 different sponsoring agencies (excluding hospitals), but the replies indicated that the great majority of persons were here on their own resources. Of the 5,036 physicians in the study, 1,932 did not give any answer. Of the remaining 3,104 persons, 2,606 indicated that they were here on their own resources. One hundred indicated that they came under the sponsorship of one or another of 10 different agencies of the United States government. Thirty-one came under the sponsorship of 18 foreign governments (the government of the doctor's home country). One came under United Nations sponsorship. Ninety-eight came under sponsorship 8 different groups and organizations—religious, eduonal, or philanthropic—either American or foreign. ne 268 indicated that their sponsor was the hospital vhich they were receiving training.

ctually, of the 4,538 who either gave no answer or icated that they had come on their own initiative, it easonable to guess that most of them have sponsor- of the hospital in which they are serving, or perhaps, he case of university-affiliated hospitals, sponsorship a university. The reason for this assumption is that, rder to obtain an exchange-visitor visa, the individual st have sponsorship of some institution. Since the hange-visitor regulations were promulgated in 1949, ne 1,850 privately sponsored exchange-visitor proms have been designated, of which over 1,000 are nsored by American hospitals and allied institutions viously for the purpose of enabling the institutions to vide training for foreign nationals.

OTHER PROFESSIONAL VISITORS

In addition to the large number of physicians who me to America from abroad for hospital internshipidency training, there are many physicians who come this country on nonimmigrant status for varying pe-ds of time as observers, visiting professors, guest rticipants in research, or in other capacities. The anal survey of foreign professors, instructors, and lecrers in the United States conducted by the Institute of ternational Education for 1954-1955 indicates that at ast 137 of these visiting educators are listed under nedicine." This is the largest separate group and presents 21.5% of 635 visitors reported. Like the ien house officers, these people come from all parts of e world, are widely distributed in this country, and have sponsorship from diverse sources. Even this does not afford a complete picture of the degree to which this country has become a medical magnet. Many of the major teaching centers, especially in the large metropolitan areas, could very quickly assemble in the course of a year a list of 100 or more alien physicians who have visited for brief periods, either on the occasion of attendance at some international medical meeting in this country or Canada or as part of a tour arranged by the World Health Organization, or the Foreign Operations Administration, or various religious and philanthropic groups. To complete this picture, the Institute of International Education conducted a survey of United States professors, instructors, and lecturers abroad during the academic year 1954-1955. This study reveals 1,047 American scholars visiting all parts of the world, of whom 38 (only 3.6%) are listed under "medicine."

TABLE 2.—*Alien Physicians Training in Approved Hospitals in the United States, 1954-1955, by Place of Origin*

Place	Total No. of Doctors	Place	Total No. of Doctors
Anglo-Egyptian Sudan	2	Japan	139
Argentina	88	Jordan	6
Australia	29	Korea	153
Austria	29	Latvia	4
Belgium	12	Lebanon	55
Bolivia	8	Liberia	1
Brazil	88	Lithuania	6
British Guiana	2	Luxembourg	3
British Honduras	1	Mexico	425
British West Indies	23	Morocco	4
Bulgaria	1	New Zealand	7
Burma	3	Netherlands	61
Canada	520	Nicaragua	30
Ceylon	2	Nigeria	3
Chile	14	Norway	13
China	170	Pakistan	9
Colombia	82	Palestine	2
Costa Rica	6	Panama	11
Cuba	184	Paraguay	7
Cyprus	4	Peru	53
Czechoslovakia	3	Philippines	776
Denmark	10	Poland	10
Dominican Republic	61	Portugal	25
Ecuador	34	Rumania	1
Egypt	29	Ryukyu Islands	1
El Salvador	8	Saar	1
Estonia	2	Saudi Arabia	1
Federation of Malaya	4	South America (undesignated)	2
Finland	6	Southern Rhodesia	1
France	24	Spain	77
Germany	323	Sweden	6
Greece	144	Switzerland	52
Guatemala	12	Syria	18
Haiti	29	Thailand	23
Honduras	15	Togoland	1
Hungary	7	Turkey	253
Iceland	6	Union of South Africa	13
India	165	United Kingdom	101
Indonesia	2	Unknown	8
Iran	117	Uruguay	1
Iraq	37	Venezuela	22
Ireland	42	Yugoslavia	8
Israel	43		
Italy	242		
		Total	5,036

SUMMARY

The number of nonimmigrant foreign physicians who are in this country for hospital internship-residency training during the year 1954-1955 exceeds 5,000; about one-third are interns and two-thirds residents. They came from 83 different countries in all parts of the world. The percentage of females, particularly from certain European and oriental countries, is significantly higher, than the proportion of females among American medical graduates. These visitors are located in all except six states. If Canadian doctors were omitted from this survey, the total reported would be reduced to 4,516, but the distribution would not be appreciably altered, since Canadians are found in 30 states, the District of Columbia, and the Territory of Hawaii. A relatively high percentage of these visitors from Canada, however, are in residencies (443 or 85%) and only a limited number in internships.

630 W. 168th St. (32) (Dr. McCormack).

CLINICAL NOTES

POLYCYTHEMIA ASSOCIATED WITH UTERINE MYOMAS

Alec Horwitz, M.D.
and
William P. McKelway, M.D., Washington, D. C.

Thomson and Marson [1] recently reported an unusual case of serious polycythemia associated with a large myoma in a 48-year-old woman. The blood picture returned to normal after abdominal hysterectomy. A review of the literature failed to reveal a similar case. This prompts us to report a similar experience, in which the removal of a large myoma caused the disappearance of a severe secondary polycythemia, and also a case of polycythemia vera, in which hysterectomy with the removal of several myomas failed to affect the blood picture.

REPORT OF CASES

Case 1.—A 47-year-old white widow was first seen because of gradual enlargement of the abdomen, over a period of three years. Her last menstrual period was at the age of 45, with normal menopause occurring at that time. There were no associated symptoms except for fulness and burning following meals. Her history revealed an appendectomy at the age of 43. There was no other operation or serious illness.

Physical examination revealed a short, stocky, plethoric white female, height, 4 ft. 10 in. (147.3 cm.), weight, 135 lb. (61.2 kg.). Her temperature was 98.6 F, pulse 110 per minute, respirations 20 per minute, and blood pressure 150/90 mm. Hg. There was marked rubor of the skin and mucous membranes. The heart and lungs were clear. A huge tumor filled the abdomen from symphysis to xiphoid. Pelvic examination revealed the tumor to be directly connected to the uterus and cervix, filling the pelvis. An electrocardiogram revealed myocardial strain with sinus tachycardia. Fluoroscopy showed the heart to be enlarged slightly to the left, with elevation of both leaves of the diaphragm. Circulation times were normal. Blood studies were reported as shown in the following tabulation. The hematocrit, taken July 13, 1952, was 44%.

At operation, April 13, 1944, an intraligamentous, 18 lb. (8,164.7 gm.) myoma arising from the right cornu of the uterus was removed. The tumor was very vascular, with several large veins measuring up to 1 in. in diameter coursing over its surface. There was minimal blood loss associated with the procedure. An interesting feature of the tumor was that it showed fibrillary twitching for 19 hours after its removal. Pathological examination confirmed the diagnosis of a highly vascular myoma.

The patient's postoperative course was uncomplicated except for an episode of thrombophlebitis with a febrile course of two weeks' duration. On July 9, 1952, the patient was admitted to the hospital for varicose vein ligation and stripping. This admission was uneventful, and, as shown in the following tabulation, the blood picture had remained normal at this time, eight years after the initial operation.

Date	Red Blood Cells, Millions	Hemoglobin, % *	White Blood Cells
4/ 8/44	10.4	116	......
4/12/44	8.5	141	......
4/14/44	5.7	105	12,000
5/13/44	4.3	75	8,500
7/ 9/52	5.0	90	9,100
7/13/52	...	98	7,500

* First 4 determinations made by Dare's method (116% ≃ 18.6 gm. pe 100 cc.); last 2 determinations by Sahli's method (90% = 14 gm. pe 100 cc.).

Case 2.—A 32-year-old white female was first admitted t the hospital in June, 1950, because of subacromial bursitis. A the time of her admission it was discovered that her red bloo cell count was exceptionally high, with a hematocrit of 57% Physical examination revealed hepatosplenomegaly. One yea later, it was noted that the patient had small uterine myoma that were asymptomatic. After this, the patient develope gradually increasing menorrhagia and a relative anemia. Sh was admitted to the George Washington University Hospita May 3, 1953. The admission physical examination was essentially normal except for moderate anemia, hepatosplenomegaly and a multinodular uterus, which measured approximately 1 by 12 cm. in diameter.

Total abdominal hysterectomy was performed on the secon hospital day. The patient had a greatly enlarged spleen tha extended down to the level of the umbilicus and an enlarge liver. The uterus had several irregular myomas, which were bot subserous and intramural. Pathological examination confirme the diagnosis of uterine myomas. The patient's postoperativ course was uncomplicated, and she was discharged on the sevent postoperative day. The blood cell counts failed to return t normal levels after correction of the relative secondary anemi and tended to assume limits consistent with polycythemia, the operative procedure apparently having had no effect on the previous blood picture. Blood studies gave the following results:

Date	Red Blood Cells, Millions	Hemoglobin, % *	White Blood Cells
2/12/51	6.5	120	22,300
2/15/51	6.3	110	22,200
4/18/51	5.2	104	23,000
4/25/53	4.0	62	14,500
6/ 9/53	4.4	83	16,900
10/ 3/53	5.0	91	14,900

* Alkaline-heme-photoelectric method (120% = 18 gm. per 100 cc.).

Bone marrow studies preceding and following the operative procedure showed erythroblastic hyperplasia, consistent with polycythemia vera.

COMMENT

Since 1948, nine female patients have been admitted to the George Washington University Hospital with the primary or secondary diagnosis of polycythemia. In no instance, other than the two cases recorded here, was there evidence of other uterine pathology or gynecologic disease. In an attempt to further correlate the presence of uterine myomas with polycythemia, records were re-

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[1] Thomson, A. P., and Marson, F. G. W.: Polycythaemia with Fibroids, Lancet 2:759-760 (Oct. 10) 1953.

viewed of 200 patients admitted during the past five years for hysterectomy because of myomas. There was no evidence of polycythemia in any of these nor was there any apparent connection between blood cell count and size of myoma. The first case reported is a secondary polycythemia that was cured by the removal of a large myoma. The reason for this result is obscure. The tumor was highly vascular, both grossly and microscopically, and the possibility of arteriovenous shunt within the tumor exists. The second case is one of polycythemia vera. The patient's menorrhagia represented an effective though uncomfortable method of control of elevated blood cell count. The hysterectomy has caused no change in the polycythemia vera.

SUMMARY

This is the second recorded case of secondary polycythemia cured by the removal of a large uterine myoma. A case of polycythemia vera, which was not cured by hysterectomy for myomas, is also reported. The possibility of arteriovenous shunt within the tumor is postulated as a cause for secondary polycythemia.

23rd Street at Washington Circle (7) (Dr. Horwitz).

A NEW TECHNIQUE COMBINING SUCTION AND FEEDING FOR USE IN GASTRIC SURGERY

I. Ridgeway Trimble, M.D.
and
John Nouri, M.D., Baltimore

Some safe and simple combined method of drainage and feeding after gastric operations has long been needed. First of all, the method should be comfortable and not irritating to the patient. Next, the method should drain any excess of retained secretions within the stump of the stomach in order to prevent vomiting, avoid gastric dilatation, and avoid excessive pressure on the line of anastomosis. The method should also drain any excessive secretions from both the afferent and the efferent jejunal limbs in order to prevent undue pressure on the closed duodenal stump and in order to be in a position to release pressure in the distal jejunal limb by suction if some paralytic ileus should develop. At the same time the method should permit all fluids and feedings to be given through the alimentary tract from the moment that the operation has been completed.

A review of appliances heretofore used or described shows that no one of them fulfills each of the desired requirements. Several types of double lumen tubes have been devised. These can drain the stomach and can enter into only one limb of the jejunum for purposes of feeding or suction. A Y tube leading from the stomach into each jejunal limb is suitable for suction but obviously could not be used for feeding. One double lumen catheter had a tiny plastic tube that could be used for feeding but had a lumen so small that fluid could be injected into it only through a needle, and it was so light that a metal bulb had to be placed on its jejunal tip in order that the small feeding tube was not regurgitated back into the stomach. No appliance heretofore described permits the removal of the suction mechanism before the feeding mechanism.

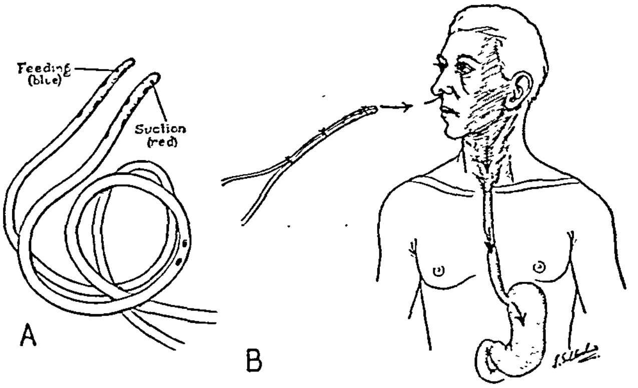


Fig. 1.—*A*, feeding tube painted blue on both ends with perforations near tip only. Suction tube painted red on both ends with perforations near tip and also at 20 cm. from tip to drain gastric stump as well as proximal jejunal loop. *B*, two no. 12 polyvinyl tubes tied together with three silk sutures; easily passed down through one nostril into the stomach.

The method of suction and feeding described here consists of two polyvinyl tubes of small caliber (12 F.) tied together and inserted before operation through one nostril down into the stomach (fig. 1). When an end-to-side anastomosis is being made between the stomach and the jejunum, the tubes are drawn down through the open gastric stump after the two posterior rows of sutures have been completed. The three silk ties are then cut, thereby separating the catheters (fig. 2). The catheter dyed red at both ends and stamped with the word "suction" is led down about 20 to 25 cm. into the proximal limb in order to drain the duodenal, pancreatic, and biliary secretions and take pressure off the closed duodenal stump. This catheter has additional holes in it to drain the gastric stump. The catheter dyed blue at both ends and stamped with the word "feeding" is led into the distal limb of the jejunum for 20 to 25 cm. and is used for giving water, saline solution, glucose solution, and a liquid diet. It can also be used for suction of the distal limb of the jejunum, should this prove desirable.

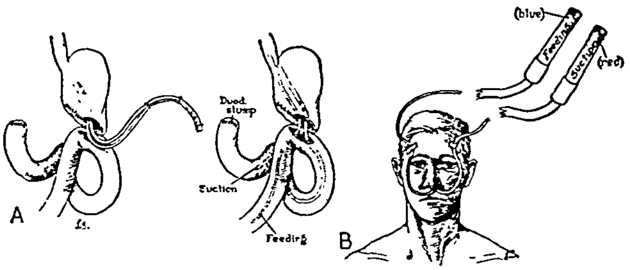


Fig. 2.—*A*, tubes are drawn down through gastric stump and the silk sutures divided; suction tube is passed down into proximal loop and feeding tube into distal loop. *B*, patient after operation, with tubes ready for use.

The polyvinyl tubes used in this study were specially constructed by the American Cystoscope Makers, Inc., New York 59.

If the operation unites the stomach end-to-end with the duodenum, the so-called Billroth 1 operation, this combination of suction and feeding is equally applicable. The suction tube is then left in the stomach and the feeding tube advanced into the duodenum.

The two small tubes tied together are just as easily inserted into the nostril as the single large tube now universally employed. For the patient's comfort, we usually spray the nostril with a mild local anesthetic before insertion. In all our cases we have used the no. 12 tube for feeding. In some we have used the next larger size, no. 14, for suction, but no. 12 has not become plugged when used for suction or feeding.

Among the advantages of this particular apparatus are: (1) drainage of the stomach; (2) drainage of the proximal loop of the jejunum; (3) drainage of the distal loop of the jejunum; (4) feeding of the patient through the jejunum; (5) refeeding where thought desirable of contents of gastric suction down feeding tube; (6) stabilization of all three limbs of gastrojejunostomy, reducing possibility of postoperative stomal obstruction; (7) aiding of early intestinal peristalsis; (8) nonirritating quality, small size, and light weight of tube; (9) avoidance of intravenous therapy; and (10) simplicity of apparatus.

All the above advantages seem rather obvious. The voidance of intravenous therapy has several good features that are worthwhile pointing out. These are derived from being able to give water, electrolytes, and food directly into the gastrointestinal tract rather than into the veins, thereby restoring the patient's metabolism most effectively, relieving the patient of the discomfort of long continuous hours of intravenous feeding, permitting earlier and more frequent ambulation, diminishing strain on the heart, diminishing the instance of phlebitis and other reactions incident to intravenous therapy, and conserving the time of the residents and nursing staff.

FEEDING AND SUCTION

Immediately after operation the blue tube marked "feeding" is connected to a slow drip of saline solution before the patient leaves the operating room. On the day of operation and on the day after operation the entire fluid, glucose, and electrolytic requirements are given through this jejunal tube. For the average adult patient, the feeding drip is started at 60 drops (4 cc.) a minute. This rate gives 240 cc. per hour and 2,880 cc. per 24 hours. Forty-eight hours after operation a high-protein, high-carbohydrate liquid diet is given through the feeding tube. Each 1,000 cc. of this diet contains 1,000 calories of food value. Each 24 hours we give a mixture of 1,500 cc. of this diet diluted in 1,500 cc. of water, a total of 3,000 cc. of liquid containing 1,500 calories. The feeding tube is usually kept down four to six days, at which time oral feedings are given. Feedings may be given through the tube in larger quantities, such as 120 cc. every half hour or 240 cc. every hour, rather than by the drip method, if this seems desirable in the individual patient.

Immediately after operation, the red tube marked "suction" is connected to gentle bedside suction. In the next 24 to 48 hours this tube can be clamped off periodically to see if it is still needed. When it is no longe needed, it can be withdrawn without having to remov the feeding tube. Suction can also be applied to th feeding tube that lies in the jejunum, if this is ever necessary, as in paralytic ileus.

This combination of feeding and suction has bee used in a relatively small number of cases of gastric resection to date. In every case it has proved most helpfu In no case, even one of radical resection of the head o the pancreas, has any postoperative intravenous therap with fluids been necessary. Daily studies of serum protein, chloride, sodium, and potassium have show prompt return to normal levels in the immediate postoperative period. The patients have all tolerated the small plastic tubes very well, apparently with less discomfort than the single larger rubber tube.

SUMMARY

A simple method for use in gastric surgery that permits a combination of suction to the stomach and afferent jejunal limb and feeding through the distal jejunal limb has proved highly successful in all patients on whom this technique has been used.

8 W. Madison St. (1) (Dr. Trimble).

DIAGNOSTIC PROBLEMS

PRESENTATION OF CASE

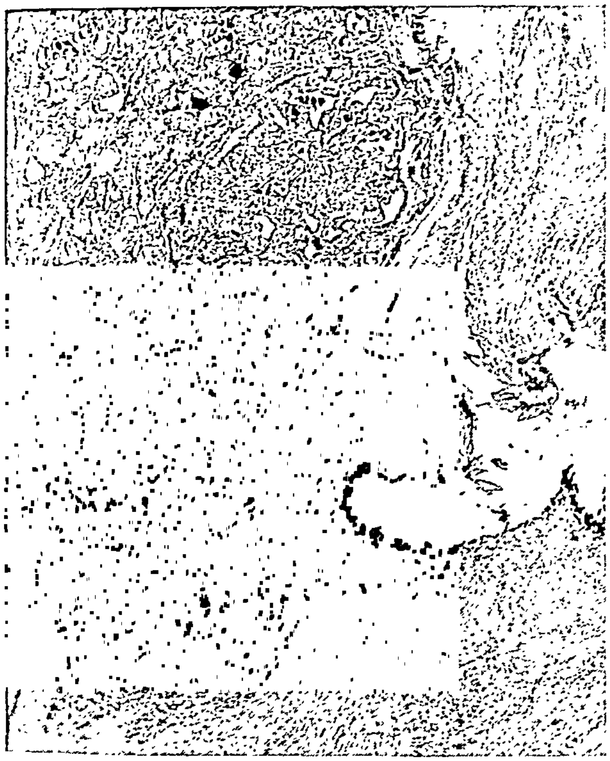
John D. Thorpe, M.D., St. Louis

A 34-year-old housewife entered Barnes Hospital for the first time on June 25, 1954. About one year prior to admission she had noted a lump in the region of the right lobe of her thyroid. This was about 0.5 in. (1.27 cm.) in diameter and nontender. There had been no alteration in its size. After a death in the family in March, 1954, she became increasingly nervous, anorexic, and lost 17 lb. (7.7 kg.) in weight. She consulted her family physician and was hospitalized for diagnostic studies. The only significant findings were a slightly enlarged thyroid with a palpable nodule in the right lobe near the isthmus. The basal metabolic rate was within normal limits on three occasions. After her discharge she regained her normal weight, but her nervousness continued, and, on June 4, she was referred to a surgeon for removal of the thyroid nodule. This was done as a local excision. The surgical specimen measured 2 cm. in diameter and microscopically revealed a papillary adenocarcinoma. The patient was then referred to Barnes Hospital for further treatment.

Physical Examination.—The patient had a recent healing surgical incision across the lower anterior portion of her neck. The left lobe of the thyroid was slightly enlarged. No significant lymphadenopathy was present in the neck. There were no clinical signs of hyperthyroidism. Laboratory examinations were within normal limits.

From the Department of Surgical Pathology, Barnes Hospital.

Course.—On the following day, total thyroidectomy was performed, with an excision in continuity with the scar of the previous surgical incision. The sternohyoid and sternothyroid muscles were divided at their points of origin on the sternum and a block dissection of the thyroid gland and adjacent soft tissues was performed. Parathyroid tissue was identified bilaterally and preserved. No lymph nodes suspected of harboring metastatic lesions could be palpated in either deep cervical chain. Microscopic examination of the surgical specimen disclosed a persistence of the papillary adenocarcinoma confined to the isthmus and a foreign body reaction to the suture fragments present after the first surgical excision (see figure). Postoperatively, the patient developed mild symptoms of parathyroid insufficiency, which responded to calcium lactate therapy. She was discharged improved seven days after the operation. Calcium lactate by mouth and a low phosphorus diet were prescribed. There were no residual hypoparathyroid symptoms at the time of discharge.



Persistent cancer in the isthmus of the thyroid. Note proximity of the carcinoma to suture fragments.

COMMENT

Charles Eckert, M.D., St. Louis

It is generally agreed that the incidence of malignancy in nontoxic nodular thyroids is significantly greater than in other clinically evident thyroid diseases. This figure reaches prominence when a solitary thyroid nodule is considered. Reliable statistics [1] indicate that in surgically excised single nodules an average of 20% prove to be malignant. A rapidly enlarging nodule or one that is firmer in consistency than the surrounding thyroid tissue should not be disregarded; delay may only serve to prevent cure. Despite accurate physical examination and laboratory studies, a satisfactory diagnosis frequently necessitates surgical exploration. Good operative judgment in the planning of the technique to follow can prevent future difficulties. Excision of the nodule with a generous margin of normal thyroid tissue if the nodule is small, or by lobectomy if it is large, should be performed. Frozen section at this time can be advantageous.

Although the prolonged clinical evolution that characterizes certain malignant thyroid tumors has been used as an argument to justify a conservative surgical approach in their management, many patients with these tumors ultimately succumb to their disease, either by local invasion of adjacent vital structures or by distant metastasis. The failures of too limited a surgical procedure are, unfortunately, often discovered too late to offer the patient more than temporary palliation. Adequate surgical removal is the treatment of choice. External roentgenotherapy has not given satisfactory results as a primary treatment, nor has it proved to be of value when used postoperatively to supplement an adequate surgical procedure.

The clinical finding of a solitary nodule in the thyroid is an indication for further study to define the exact nature of the pathological process. This can only be accomplished by operative exposure and the removal of tissue for pathological examination. The surgeon must examine the entire thyroid gland, as well as palpate the deep cervical lymph nodes. It is therefore necessary to expose the area through an adequate transverse incision placed in a convenient skin crease in the lower part of the neck. Under no circumstance should small incisions be used for direct exposure of the nodule alone, limiting the examination of the entire gland. When a solitary nodule is found in the isthmus, as in the case here described, the entire isthmus should be removed. If a lateral lobe is involved, a lobectomy should usually be performed. In doing this the recurrent laryngeal nerve should be identified and preserved. Incisional biopsy is to be avoided in order to minimize the possibility of the implantation of tumor cells within the operative field. Immediate frozen section by a competent surgical pathologist will be of great assistance to the surgeon in deciding the necessity for further measures when the pathologist is able to make a definite diagnosis of cancer. This can frequently be accomplished in the papillary tumors and in undifferentiated carcinomas. In the case of the well-differentiated follicular tumors, great difficulty in diagnosis by frozen section may be encountered, as indeed great difficulty may be found in making this diagnosis with permanent sections.

When a diagnosis of papillary carcinoma of the thyroid has been established, total thyroidectomy is indicated because of the finding of multiple foci of origin in one or both lobes.[2] These foci may be exceedingly small; therefore, palpation of the exposed thyroid cannot be depended on for their discovery. Neck dissection in treating a papillary carcinoma is indicated when lymph nodes clinically suggestive of harboring metastases are palpable. Follicular tumors metastasize to regional lymph nodes less frequently than do the papillary tumors, but, if lymph

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From the Department of Surgery, Barnes Hospital.

nodes clinically suspected of harboring metastases are palpable in the lateral portion of the neck, a dissection of this region is indicated.[3] The undifferentiated carcinomas have an exceedingly poor prognosis, but, in the rare case in which vital structures have not been invaded or distant metastasis has not occurred, adequate surgical removal can control the tumor. With a carefully planned and skilfully executed surgical procedure, operative and postoperative complications can be minimized and the patient will be given the maximum chance of being cured.

1. Cole, W. H.; Majarakis, J. D., and Slaughter, D. P.: Incidence of Carcinoma of the Thyroid in Nodular Goiter, J. Clin. Endocrinol. **9**: 1007-1011 (Oct.) 1949. Cole, W. H.; Slaughter, D. P., and Majarakis, J. D.: Carcinoma of the Thyroid Gland, Surg., Gynec. & Obst. **89**: 349-356 (Sept.) 1949. Cope, O.; Dobyns, B. M.; Hamlin, E., and Hopkirk, J.: What Thyroid Nodules Are To Be Feared? J. Clin. Endocrinol. **9**: 1012-1022 (Oct.) 1949. Crile, G., Jr., and Dempsey, W. S.: *Indications for Removal of Nontoxic Nodular Goiters*, J. A. M. A. **139**: 1247-1251 (April 30) 1949.

2. Frantz, V. K.: Personal communication to Ackerman, L. V., quoted in Cancer: Diagnosis, Treatment, and Prognosis, ed. 2, St. Louis, C. V. Mosby Company, 1954.

3. Eckert, C., and Byars, L. T.: The Surgery of Papillary Carcinoma of the Thyroid Gland, Ann. Surg. **136**: 83-89 (July) 1952.

COUNCIL ON PHARMACY AND CHEMISTRY

EPORT TO THE COUNCIL

The Council on Pharmacy and Chemistry has authorized publication of the following reports.

R. T. STORMONT, M.D., *Secretary.*

The following articles are the most recent additions to the series of reports on pesticides of immediate medical interest. The Committee wishes to acknowledge the assistance of Drs. Wayland J. Hayes Jr. and Francis F. Heyroth in reviewing the manuscript and the contributions of records of poisoning by Drs. Ted Clemens Jr., Amos Graves, George Miners, and David A. Todd and Mr. Allen B. Lemmon.

BERNARD E. CONLEY, *Secretary,*
Committee on Pesticides.

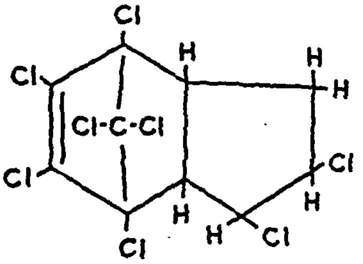
THE PRESENT STATUS OF CHLORDANE

Chlordane is a chlorinated hydrocarbon insecticide that has been subject to much legal and scientific controversy. It has been a variable product available as an impure mixture by either of the two available methods of manufacture. One of these methods, now abandoned because of patent conflicts, is said to have been a less efficient procedure and left more impurities in the commercial product.

The insecticidal properties of chlordane were independently discovered almost simultaneously in the United States and in Germany. The American product was developed and tested during World War II, and commercial production began shortly after hostilities ceased. A German preparation designated as M-410, with a formula similar to chlordane, was developed in 1945. It was synthesized and tested as an insecticide because of structural similarities to cantharidin, a vesicant principle in Cantharis vesicatoria, the blistering beetle, which in dried form has been used as an irritant drug and contact insecticide. Because of chemical shortages and patent restrictions, the German product has not been prepared in commercial quantities.

PROPERTIES

Chlordane is the common name generally accepted for the chemical compound 1, 2, 4, 5, 6, 7, 8, 8-octachloro-4, 7-methane-3a, 4, 7, 7a-tetrahydroindane. It is a heavy, dark brown, oily liquid that is insoluble in water but soluble in the common organic solvents. In common with other chlorinated hydrocarbons, it is unstable in the presence of weak alkalis, and dehydrohalogenation occurs with a consequent loss of insecticidal activity. The structural formula may be represented as follows:



Technical chlordane, the commercially manufactured product, contains 60 to 75% chlordane and 25 to 40% related compounds. There are at least eight theoretically possible stereoisomers of chlordane of which the alpha and beta isomers have been separated by chromatography. A so-called gamma isomer has been reported but was later found to be identical with the alpha isomer. It is about 70% as active as the technical mixture.

A variety of other constituents have been identified in the mixture normally resulting from the manufacturing process. These compounds include chlordene, the mono and trichloro derivatives of this chlordane precursor, and reaction intermediates such as hexachlorocyclopentadiene. Full information on the biological properties of these compounds is not available, but enough is known to indicate that many contribute to the insecticidal activity and in certain instances to the harmful properties of the finished product. The newer insect toxicant, heptachlor, was originally isolated from this uncharacterized fraction of the commercial mixture.

The technical product is a viscous, pungent, amber-colored liquid that is available in two grades, agricultural and refined. The agricultural mixture is a thick, syrupy liquid that is used whenever the staining of treated surfaces is not a problem. The clarified grade is less viscid and of a lighter color and is generally used for the control of household insects. Lethal action on susceptible organisms results from contact, ingestion, or exposure to chlordane vapors. The volatile properties and residual characteristics of chlordane are intermediate between those of chlorophenothane (DDT [dichlorodiphenyltrichloroethane]) and gamma benzene hexachloride.

USES

Chlordane is effective in the control of certain agricultural and household pests and for the abatement of various arthropods of public health importance. It is available in the form of oil solutions, emulsion concentrates, wettable powders, and in insecticidal dusts, paints, and waxes.

Agricultural uses of chlordane include the control of grasshoppers, cotton insects, and certain pests affecting livestock and soil. It is not accepted for use on food crops during periods of growth when edible parts are present or on forage, hay, or silage crops intended as feed for dairy animals, poultry, and meat animals being readied for slaughter. Recommendations against such uses are predicated on dangers associated with the ingestion of small deposits of the substance in food crops or their retention in milk, eggs, or body tissue of slaughtered animals. A tolerance of 0.3 ppm has been established under the federal Food, Drug and Cosmetic Act as the limit on the amount of chlordane that may appear on or in specified fruits and vegetables.

Chlordane has not been accepted as a space spray against flying insects. It is registered for use as a residual application against ants, flies, mosquitoes, roaches, and certain other household insects in 3% concentrations (emulsions and solutions) and 6% dusts. Because of its fumigant properties and chronic toxicity, recommendations for residual use in homes are limited to spot treatment of selected indoor surfaces such as around baseboards, doors, and windows in the kitchen. It is not approved for over-all treatment of interior surfaces because slow liberation of fumes, especially in closed heated rooms, constitutes a danger to persons regularly exposed. Special care should also be taken to avoid deposits on areas frequently contacted by children. Newly treated lawns may constitute a special problem in this respect unless the chemical has been thoroughly washed into the soil after treatment.

No medicinal use for chlordane in the pure form or technical mixtures has been found acceptable to date. It has been proposed for use in the treatment of pediculosis capitis and scabies, but the high dermal toxicity of the compound after repeated use has discouraged serious consideration for these purposes.

PHARMACOLOGY

A complete pharmacological evaluation of technical chlordane is difficult because it is not a definite chemical entity. The commercial products have been variable mixtures of several chlorinated hydrocarbons, some of which have not been identified and are not always present in the same proportions. The indefinite composition of even current productions of the technical preparation increases the difficulties of assessing chlordane's intrinsic metabolic nature and precludes all but the broadest generalities concerning its action and fate in the animal body.

In general, chlordane acts substantially like other chlorinated hydrocarbon insecticides whose sites of action are on the higher motor cortex and the cerebellum. It does not affect vital centers in the medulla. In contrast to chlorophenothane and its derivatives, there appears to be little correlation between the chlorine content of the mixture and its biological activity. No pronounced antagonism or synergism is observed when it is combined with other chlorinated hydrocarbon insecticides.

Chlordane is absorbed into the body from the gastrointestinal tract, respiratory tract, and skin. Information is lacking on the comparative absorptive rates between chlordane and the other chlorinated hydrocarbon insecticides by these various routes of entrance. It would seem, however, that the volatile and liquid nature of the chemical would lend itself to a more rapid and greater penetrability of the body barriers than many other synthetic insecticides belonging to the chlorinated class. Chlordane may be absorbed by the body from any type of formulation, although the physiochemical characteristics of the solvents and diluents present may influence the rate at which this occurs.

Little is known about the distribution of chlordane in tissues, its rate of disappearance, or the susceptibility to chlordane of various animal species. There are indications that chlordane or a chlordane-like compound is stored in some form, especially in fat. It seems to disappear fairly rapidly when administration of the insecticide is discontinued. Acidic chlorine-containing degradation products, which are water-soluble at pH 8.6 or higher, have been isolated from rabbit urine, suggesting that this may be the mechanism for detoxification of chlordane in the animal body. It has also been observed that a substance, which is toxic to the suckling young of the species, is secreted in the milk of lactating rats fed a diet containing 150 ppm of chlordane. Young animals have been found to be more susceptible to chlordane than adults, and it is slightly more toxic for female rats than for males. Individual susceptibility to the compound varies greatly. Other comparisons within and among animal species have not been reported.

TOXICITY

Chlordane is one of the more hazardous of the chlorinated hydrocarbon insecticides. It is a lipophilic liquid that is readily absorbed by the skin, alone, as well as in the presence of solvents. It has a low but appreciable vapor pressure and definite residual properties. Lastly, and perhaps of greatest significance, is the fact that the technical preparation is still an uncharacterized mixture of chlorinated hydrocarbons whose toxic properties and metabolic fates are poorly understood. Although recent evidence supports the contention that current production provides a more uniform mixture whose toxicity to experimental animals is less than that reported in earlier studies, no satisfactory analytical method exists for precise identification and estimation of the contents of the commercial mixture.

Oral Toxicity.—Until recently, the oral dose of chlordane that is fatal to humans was not known. A reported suicide, presented in the statement accompanying this review, indicates that about 100 mg. per kilogram of body weight of the technical mixture has killed an adult. Other reports of fatal injury exist, but determination of the lethal influence of chlordane was complicated by the presence of other pharmacologically active agents.

The chronic oral toxic dose of chlordane for humans is not known. In long-term feeding tests, chlordane was found to be significantly more toxic to rats than chlorophenothane, although on an acute basis it has been found to vary from approximately one-half to twice the toxicity of chlorophenothane. The estimated chronic oral toxicity of chlordane ranges from two to four times that of chlorophenothane. Unfortunately, these estimates have even less than their usual meaning in terms of amounts that may be harmful to humans because of the uncertain composition of the technical mixture used in the various studies on which these estimates were based.

Skin Toxicity.—After dermal application chlordane is more toxic than chlorophenothane because it is readily absorbed through the unbroken skin. Since it is an oily liquid by nature, even dry formulations do not prevent cutaneous absorption. Particularly significant is the relatively high toxicity of preparations of chlordane in the form of wettable powders. This type of formulation is usually assumed to be less readily absorbed than solutions containing solvents. The hazards from repeated skin exposure to chlordane are sufficiently great to warrant cautions against its use in insecticidal waxes, polishes, and similar preparations that might contact the skin frequently. Its rapid absorption through the skin and greater toxicity after repeated application justify these limitations in use.

The skin irritating properties of technical chlordane mixture are said to have been decreased with the reduction in the amount of unreacted chemical intermediates in the mixture. Irritation of skin and mucous membranes continues to be reported, however, as evidenced by the case reports. If petroleum distillate solvents are present, they may contribute to the irritating properties but not necessarily to the sensitizing properties of the technical product.

Although superior to chlorophenothane in action, chlordane was found to be too toxic for formulation into louse powders to be used in the armed forces. For the same reason it is the least acceptable of the several insecticides used as dips for farm animals. At ordinary concentrations and frequencies of application, chlordane does not produce signs of acute poisoning; however, experience has shown that it has a narrow margin of safety in livestock pest control. Increased uniformity in production of the technical mixture is expected to improve the safety factor.

Inhalation Toxicity.—Little is known about the inhalation toxicity of chlordane. On a comparative basis the possibilities for poisoning by this avenue of entrance into the body are believed to be greater with technical chlordane than with chlorophenothane formulations because of the physicochemical characteristics of the former substance. Certain suggestive findings derived from the use of chlordane and closely related chemicals seem to support this contention. The technical mixture is a slightly volatile liquid with significant residual characteristics. Fumes are given off over an extended period of time and unless readily dissipated offer a distinct danger to persons who are exposed. Available reports of human injury by chlordane vapors or fumes are controversial, although clinically verified cases of poisoning from combined skin and respiratory exposures to closely related chemicals that are also present in technical chlordane have been recorded.

Adverse effects were reported in laboratory animals and birds whose living quarters had been treated with chlordane formulations in spite of subsequent treatment with strong alkaline detergents and a thorough airing. Mice also were reported to have manifested a loss of activity and muscular coordination after breathing a low concentration of chlordane vapors for a few weeks. Weight gains and appetite were normal during this period, but liver damage became evident after six weeks of exposure. One-half the mice died in periods varying up to the 15th week, and all were dead in 16 weeks. Mice that breathed air saturated with chlordane lost all coordination and became blind in a few hours. All died in four days when exposed continuously to the vapor.

These injuries have been attributed to certain impurities present in earlier batches of the technical mixture. Current chlordane production is stated to have reduced at least one of these elements, hexachlorocyclopentadiene, to a minimum as evidenced by subsequent animal experiments and by the experience of one man who voluntarily exposed himself to a chlordane fog for a short interval, biweekly, for three months. These reports should not be interpreted as indicating that the vapor hazard is no longer of any consequence.

Reported Cases of Systemic Chlordane Poisoning

Case	Exposure	Formulation	Dose	Result	Reference
Agriculture					
Exterminator	Inhalation and skin	Spray	....	Recovered	Calif. Dept. of Health
Unspecified	Inhalation and skin	Spray	....	Recovered	Calif. Dept. of Health
Nurseryman	Inhalation and skin	....	....	Recovered	Calif. Dept. of Health
Field worker	Inhalation and skin	Spray	....	Recovered	Calif. Dept. of Health
Industry					
Formulator	Skin	Chlorophenothane-chlordane solution	> 100 cc.	Died	Derbes, V. J., and others: J. A. M. A., this issue, p. 1367
Home					
Adult male	Inhalation and skin	Spray	....	Mild poisoning	Ward, J. C.: Personal communication
Housewife	Ingestion	5% powder	104 mg./kg.	Suicide	Derbes, V. J., *and others:* J. A. M. A., this issue, p. 1367
Adult male	Ingestion	Oil solution	60 cc.	Moderate poisoning	Kansas State Board of Pharmacy
Student (aged 18)	Inhalation	3% spray	....	Died	Miners, G.: Personal communication
Student (aged 18)	Ingestion	40% oil solution	32 mg./kg.	Severe poisoning	Dadey, J. L., and Kammer, A. G.: J. A. M. A. 153: 723 (Oct. 24) 1953
Child (aged 3)	Ingestion	2% solution	30-40 mg./kg.	Severe poisoning	Micks, D. W.: *Texas J. Med.* 50: 148 (March) 1954
Infant (aged 10 mo.)	Skin	2% spray	"Small amount"	Mild poisoning	
Child (aged 15 mo.)	Ingestion	50% wettable powder	10 mg./kg.	Severe poisoning	Lensky, P., and Evans, H. L.: J. A. M. A. 149: 1394 (Aug. 9) 1952
Adult male	Ingestion	2% oil solution	2-4 gm.	Died	Hayes, W. J. Jr.: Personal communication
Adult male	Skin	2% oil solution	500 cc.	Died	Landé, K. E., and Boone, G.: J. A. M. A. 153: 179 (Sept. 19) 1953

Pathology.—The pathological findings in the two fatalities attributed to chlordane described in the accompanying report of the Committee are generally similar to those observed in experimental animals and livestock who received acute lethal doses of the chemical. Pulmonary edema and gastrointestinal irritation dominate the pathological picture of acute poisoning in experimental animals, whereas generalized congestion, edema, and hemorrhage into various organs were reported in human cases. Irritation and chemical burns of the alimentary tract were also noted in the person who ingested a fatal dose of chlordane.

Postmortem findings in chronic chlordane poisoning are equally nonspecific. In addition to signs of severe vascular injury, parenchymatous degenerative changes in the liver and kidney have been observed. These are characteristics of long-term toxic exposure to chlorinated hydrocarbon compounds. The liver is the most sensitive organ and reveals the greatest degree of cell alteration. At low levels of exposure to chlordane, changes in liver cells cannot be correlated with changes in physiology. The question of whether these anatomic modifications represent functional impairment is a problem to which present scientific knowledge has no answer.

Symptoms.—The symptoms of acute chlordane intoxication are similar to those observed in poisoning by chlorophenothane and other chlorinated hydrocarbon insecticides. Irritability, salivation, labored respiration, muscle tremors, convulsions, and death with or without an immediately preceding period of deep depression is the classical pattern of poisoning in experimental animals. These symptoms, which are referable to the central nervous system, have all been observed in humans. Nausea, vomiting, diarrhea, and abdominal pain have been reported to follow ingestion of toxic doses. Blurred vision, cough, ataxia, confusion, delirium, and mania are further symptoms noted after inhalation and skin absorption of poisonous amounts of chlordane.

The accentuation or predominance of any particular symptom or group of symptoms depends primarily on the severity of the poisoning and to a lesser extent on the type of exposure. The onset of symptoms and the course of poisoning are influenced both by the mode of entrance into the animal body and by the solvent vehicle or other additives present in the formulation. Generally speaking, acute signs of poisoning usually appear within 45 minutes after ingestion. Death may occur within 24 hours; it is frequent between the 48th and 96th hours, but it may be delayed many days following a single oral toxic dose.

Chronic chlordane poisoning may be manifested by disturbances of the central nervous system; it particularly affects the optic nerve. Moderate skin irritation, liver damage, and inanition also have been observed in experimental animals. Albuminuria develops shortly before death and in some instances has been the only objective evidence of cumulative toxicity. Unfortunately, the late appearance of this symptom precludes its use as a diagnostic sign in the determination of incipient poisoning resulting from prolonged exposure to chlordane.

Treatment.—The management of chlordane poisoning, like that for intoxication from other of the chlorinated hydrocaron insecticides, depends on the use of symptomatic measures; hat is, the removal of the poison from the skin or stomach ollowed by a saline purge and sedative therapy. In case of ccidental skin contact, the contaminated areas should be imnediately washed with soap and water to prevent or reduce bsorption. Dermatological therapy should be instituted for ontrol of inflammatory or other irritant skin conditions. If hlordane is ingested, gastric lavage followed by the administration of epsom salts or other saline cathartics is recommended. ince milk, oil purgatives, and other fatty or oily demulcents nd evacuants facilitate absorption of the toxicant, they should e avoided. Intravenous administration of secobarbital sodium, iopental sodium, or other short-acting barbiturates is sugested for the rapid treatment of the extremes of central nervous ystem stimulation in acute poisoning. Phenobarbital sodium is dvised for more prolonged sedation and for treatment of the ore moderate symptoms of overstimulation. When renal or epatic damage is suspected, appropriate treatment should be stituted.

CLINICAL EXPERIENCE

Several deaths have occurred after exposure to heavy conntrations of chlordane. The fatalities reported to the Comittee are listed in the accompanying table. Too often, hower, published reports of poisoning are merely representative many injuries that, for a variety of reasons, are unrecorded. would therefore be misleading to make comparisons or otherise generalize on the safety of chlordane when full facts on toxic character and actual safety record are poorly underood.

With the exception of the suicide that is described in detail the accompanying report, the several tabulated deaths ributed to chlordane have all been complicated by the presce of other agents with pharmacological activity. In the dustrial accident, the diagnosis of the cause of death was comcated by the presence of a related compound, chlorophenoine, and emulsifying agents that facilitated absorption of both lordane and chlorophenothane. While it cannot be stated unuivocally that chlorophenothane was without influence, chlorne is believed to be the responsible agent because of its greater n toxicity after single exposures. In another recorded fatality, onic alcoholism made the diagnosis difficult. Although the intion of chlordane solution was believed to be the precipitat and influencing factor in death, the presence of severe liver nage sufficiently incapacitated the victim so that normally lethal doses of chlordane were fatal. Liver damage may also ve been a contributing factor in the undiagnosed death of a ient with a history of gross skin exposure to a chlordane ay.

57-year-old vagrant, a known chronic alcoholic, was treated for lice r to transfer to another jail. The disinfestation consisted of spraying prisoner with nearly a pint of a fly spray containing 2% chlordane a petroleum distillate base. The incident occurred in the summer and sumably the man wore little clothing. He suffered from a chronic, ping, and generalized eczema. Shortly after the spraying he collapsed. er 45 minutes marked by muscle twitching and convulsive movements, prisoner died. Severe liver degeneration compatible with chronic holism was found on autopsy. No chlordane was discovered in ues, and no cause of death was assigned at autopsy.

The recorded nonfatal systemic poisonings attributed to ordane were largely the result of carelessness in the handling d storage of the commercial mixture. Improper storage in a dicine cabinet and in a drinking glass and the spraying of an ant by her 3-year-old brother accounted for three misadvenes with the product. A lack of informative labeling on locally tributed preparations enhanced the seriousness of poisoning another case of accidental ingestion. Excessive inhalation and n contact of chlordane during application by a week-end rdener, park employee, pest control operator, and three agriltural workers accounted for symptoms of poisoning in six ditional cases of nonfatal injury. Local and systemic sensiity reactions have also been attributed to chlordane.

A number of cases of contact dermatitis have been reported nong exterminators and employees of pest control firms with tle or no previous history of allergy or skin trouble. In several stances patch tests confirmed the relationship, and in all instances removal from exposure to chlordane improved the skin condition. Examination of workers in two industrial plants manufacturing chlordane, however, did not reveal any evidence of injury. Systemic reactions with a possible allergic basis associated with chlordane exposure have been infrequently reported.

A fatal case of aplastic anemia in a patient with a history of exposure to chlordane and toxaphene has been reported to the Committee. The patient, a woman aged 40, with no history of allergy, had a primary refractory anemia of undiagnosed etiology. Her history was essentially negative except for occasional exposure to chlordane, toxaphene, and headache pills (aspirin and a proprietary mixture containing aspirin, acetophenetidin, and caffeine). Exposure to chlordane and toxaphene resulted from the picking and handling of cotton balls from a field previously treated with these insecticides. After her illness began, additional drugs were taken including penicillin, unspecified sulfonamides, "appetite reducers," and estrogens. After a protracted illness of two and one-half years, the patient died of aplastic anemia with marked hemorrhage as the terminal event.

A second fatality involving hypoplastic anemia in a previously healthy college student after use of a water-based chlordane spray is more suggestive. The patient had repeatedly sprayed for ants around the baseboard of his study and bathroom. On these occasions, he is reported to have remained in the unventilated room to study. After an illness of 13 months, the patient died from extensive internal hemorrhages. In both cases, there was a history of exposure to common drugs such as aspirin and sulfonamide.

FATAL CHLORDANE POISONING

Vincent J. Derbes, M.D.
J. H. Dent, M.D.
W. W. Forrest, M.D.
and
M. F. Johnson, M.D., New Orleans

This report describes two human fatalities from chlordane poisoning. One of these was caused by absorption of accidentally spilled chlordane; in the second case the patient swallowed chlordane deliberately, with suicidal intent. These are the first examples of fatal chlordane poisoning in human beings that have been reported in detail. Since chlordane is used so widely as a domestic and agricultural insecticide, it seems desirable to report the findings in these cases as a general warning.

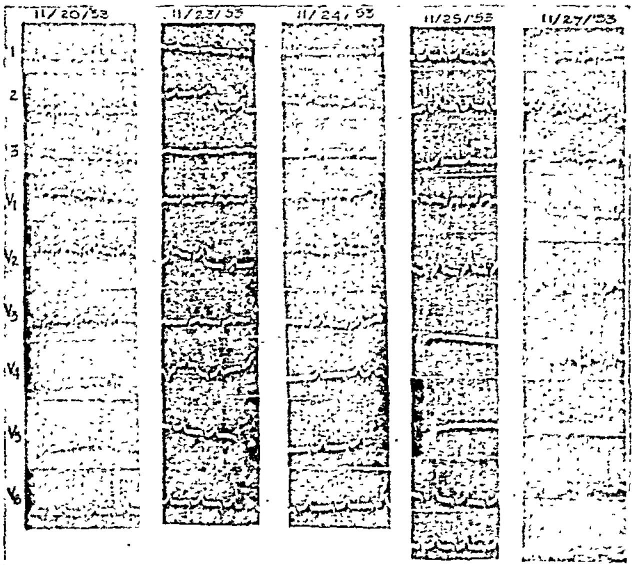


Fig. 1.—Electrocardiograms in case 2. The depressed S-T segments and T waves changes of Nov. 27, 1953, are in accord with the postmortem findings of myocarditis. They also suggest or are compatible with electrolyte disturbances.

From the Department of Medicine (Drs. Derbes and Johnson) and the Department of Pathology (Drs. Dent and Forrest), Tulane University School of Medicine, and from the Charity Hospital of Louisiana.

Dr. Wayland J. Hayes Jr. and Mr. Bernard E. Conley gave criticisms and suggestions during the preparation of this report.

REPORT OF CASES

Case 1.—A 23-year-old woman, who had worked with insecticides for perhaps two years and whose hands had been in contact with this material, on Oct. 21, 1949, spilled an unknown amount of a suspension consisting of 25 lb. of chlordane, 26 lb. of chlorophenothane (DDT), 39 lb. of velsicol AR 50, and 10 lb. of triton X-100 on the front of her clothing. About 40 minutes later she became confused and rather suddenly began having generalized convulsions. Attendants attempted to wash the material off her abdomen and thighs, but the contaminated clothing was not removed. She was promptly sent to a doctor's office by ambulance, but on arrival she was dead. There was no evidence that she had shown previous symptoms of drug intoxication, even though she had handled many of the chlorinated hydrocarbons during the two years.

Table 1.—*Autopsy Findings in Case 2 Performed Twenty-Four Hours After Post Mortem*

External Examination	
Left pupil	slightly irregular in shape
Left conjunctiva	minute hemorrhagic area laterally
Gingivae	shallow areas of ulceration covered with a black crust
Lips Buccal mucosa Hard palate	surgical ulcers
Sacrum	shallow decubitus ulcer, 4 × 4 cm.
Neck Organs	
Epiglottis	ulceration on epithelium
Larynx	contained dirty, tenacious, brown fluid resembling aspirated stomach contents
Thoracic Cavity	
Lungs	weight, 1,350 gm.; pleura of both lower lobes coated with thin fibrinous exudate; extensive confluent bronchopneumonia in both lower lobes and left upper lobe; cut surface friable, with a dirty brown fluid exudate
Pericardial Cavity	
Heart (fig. 3*A*)	weight, 300 gm.; right ventricle 0.3 cm. thick, left ventricle 1.2 cm. thick; both dilated; myocardium flabby; coronary arteries patent
Cranial Cavity	
Brain (fig. 3*C*)	weight, 1,170 gm.; no significant gross abnormalities
Peritoneal Cavity	
Liver	weight, 1,450 gm.; no gross abnormalities except for scattered areas of congestion
Spleen	weight, 140 gm.; cut surface soft; malpighian corpuscles indistinct
Kidneys (fig. 3*B*)	weight, 300 gm.; pale tan, flabby; capsules stripped revealed smooth surfaces; cut section of cortex, pale and swollen; pyramids congested and red
Urinary bladder	edema; scattered areas of hemorrhage in mucosa
Endometrium	hemorrhagic in areas
Vagina	superficial ulceration in mucosa
Cervix	mucopurulent exudate in external os
Pancreas Adrenals Stomach Intestines Fallopian Tubes Ovaries Myometrium	not remarkable

At autopsy it was found that the lungs and kidneys were congested and hemorrhagic; the stomach mucosae showed congestion. When the gross specimens were reviewed, no characteristic chemical odor was noted. The kidneys and lungs were congested; the liver was pale, but no lesions were noted in the heart, spleen, or stomach. The brain showed congestion, scattered petechiae, and edema; there was flattening of the gyri and numerous petechiae were scattered throughout. When the microscopic sections were reviewed, no pathognomonic lesions were found. Edema of the lungs, generalized congestion, and cloudy swelling were observed as in experimental animals poisoned the chlorinated hydrocarbons. The patient's symptoms and autopsy lesions were similar to those in animals poisoned chlorinated insecticides.

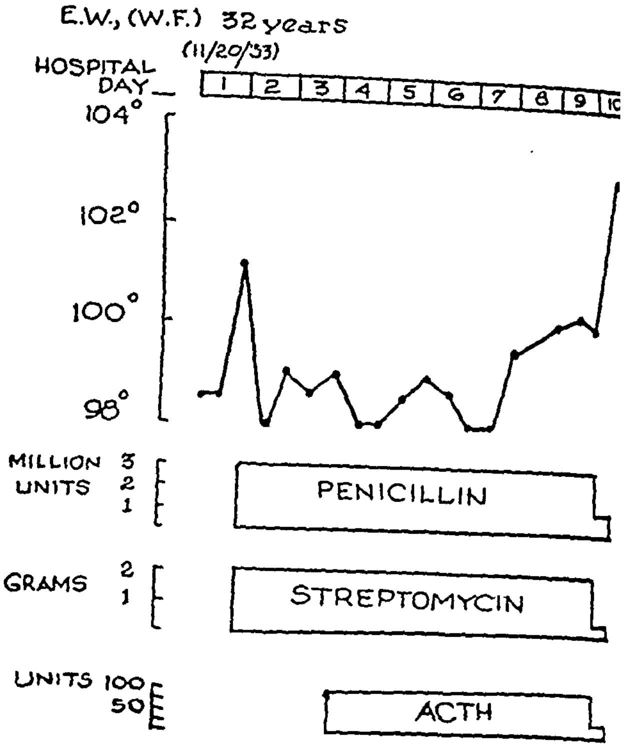


Fig. 2.—Summary of clinical course in case 2.

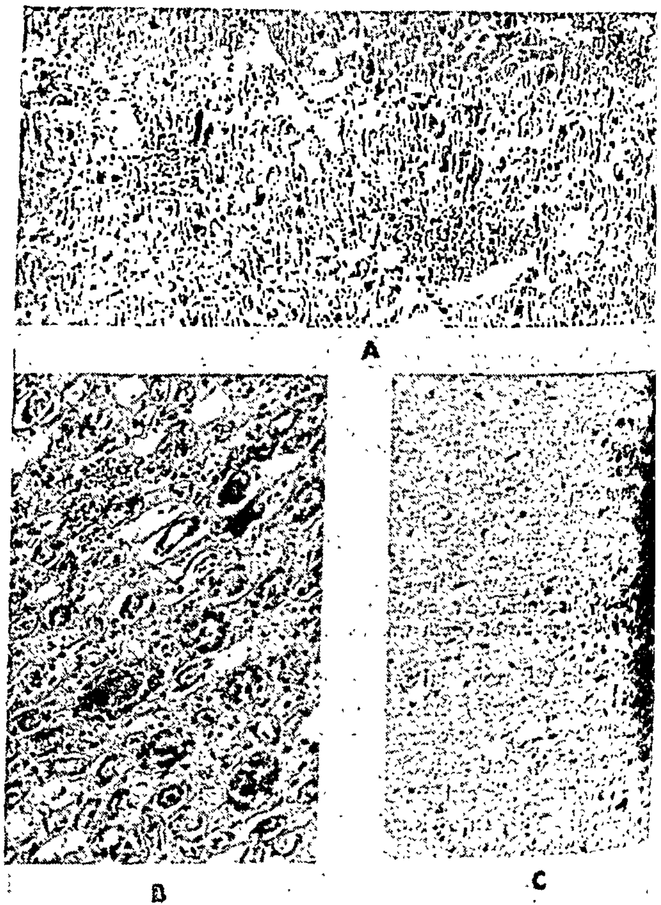


Fig. 3.—*A*, myocardium of patient in case 2 in which congestion a petechiae may be seen. *B*, kidneys of patient in case 2 showing casts in the distal collecting tubules. *C*, brain of patient in case 2 show focal area of gliosis within the basal ganglions. The neuronal ch are post mortem.

Case 2.—A 32-year-old, chronically depressed white wid had attempted suicide twice in 1944, first using roach poi and then a barbiturate. *On Nov. 19, 1953*, about 8 p. m., s half filled an 8 oz. glass with toxichlor dust, which contains 5% chlordane and related chemicals and 95% talc. She added water and swallowed the mixture.

About 10:30 p. m. she began to vomit and continued to vomit throughout the night. After about three hours the vomitus became blood streaked. Several hours later she became hoarse and a dry cough developed. On the afternoon of Nov. 20 she s admitted to a hospital. She was haggard, with a wild, wide- d look, and was agitated and restless. Apprehension was table. The voice was hoarse and nasal. She moved her mouth le or none when speaking because of buccal pain. Tempera- e was 99.8 F (rectal); pulse rate 88 beats per minute; respira- n rate 20 per minute; blood pressure 140/92 mm. Hg. There s lateral nystagmus; diopter cupping of the optic disks was sent. Old caked blood was seen on the teeth and about the s; gingivitis was intense, a gray exudate covered the gums, ccal mucosa, uvula, tonsillar pillars, and pharynx; the tongue s quite red. Breathing was noisy; medium and coarse moist les were heard throughout both lungs, but there was no dull- ss or altered breath sounds. The heart and abdomen were rmal. Except for the afore-mentioned findings the neurologi- l examination was normal. The electrocardiogram revealed rate of 118 beats per minute; the P-R interval was 0.11 seconds, e QRS time was 0.08 second; T waves were diphasic (fig. 1).

TABLE 2.—*Hematological Findings in Case 2*

	11/20/53	11/24/53	11/28/53
Hemoglobin, gm.	17	11.8	12
Red blood cells, millions	4.83	2.5	..
Hematocrit, %	49	33	31
Sedimentation rate, corrected	17	....	..
White blood cells	18,000	15,400	77,800
Segmented neutrophils	95	92	88
Band neutrophils	5	3	1
Lymphocytes	..	5	1

TABLE 3.—*Blood Chemistry in Case 2*

	11/20/53	11/21/53	11/23/53	11/24/53	11/25/53	11/27/53	11/28/53
Glucose, mg.	154	..	..	..	..	..	..
Carbon dioxide, vol. %	34	40	38	35	..	28	25
Blood urea nitrogen, mg.	27.4	22.6	56	63	..	80	63
Creatinine, mg.	...	..	11.6	..	..	22.4	23.8
Chloride, mg.	530	522	540	516	..	486	450
Prothrombin time, sec.	...	..	..	..	18	..	..
Bilirubin, mg.	...	..	..	..	0.59	..	..
Cephalin flocculation	...	..	..	..	++	..	..
Thymol turbidity, units	...	..	..	..	3.6	..	..

She had been completely anuric since admission to the hos- tal. An infusion of 750 cc. of glucose-saline was given. pproximately 20 cc. of urine was collected from the indwell- g catheter. She was given nasal oxygen, penicillin (3 million nits daily), and streptomycin (2 gm. daily). Cough and expec- ration occurred and cyanosis appeared.

On Nov. 21 increasingly severe pain in the mouth, throat, nd epigastrium required meperidine hydrochloride for relief. he breath was foul. Sputum became so tenacious that suction as required. The blood pressure fell to 86/48 mm. Hg, but ressure rose to 100/60 mm. Hg after administration of levarte- nol bitartrate. On Nov. 22 corticotropin therapy was begun a dosage of 100 units daily, given intramuscularly. Pain in he abdomen and throat continued and apprehension was in- ense. A small, dark brown, liquid stool containing occult blood vas passed. On Nov. 23 palmar erythema, which had been quivocally present the day before, became obvious. Amobarbi- al sodium, 0.25 gm., was given intramuscularly for restlessness. On Nov. 24 speech was incoherent and irrational. On Nov. 26 she vomited a dark oily liquid, and diarrhea occurred. A roentgenogram showed a diffuse bronchopneumonia. She became increasingly agitated. Only partial sedation was obtained after administration of 30 cc. of paraldehyde on Nov. 27. On Nov. 28 she continually moaned, cried, and shouted. In spite of continuous administration of oxygen, cyanosis was present. The breath had a peculiar, unpleasant odor. The white blood cell count was 78,000 per cubic millimeter. Blood pressure fell to 50/0 mm. Hg at 10 a. m., and levarterenol was added to a 500 cc. transfusion, causing a temporary improvement. About midnight muscle twitching was noted. At 2:15 a. m. on Nov. 29 generalized tonic and clonic convulsions lasted 10 minutes. Convulsions of shorter duration continued until death at 8:30 a. m., approximately 228 hours (nine and one-half days) after ingestion of the chlordane. Laboratory data and autopsy findings are given in tables 1, 2, and 3; a summary of the clinical course is given in figure 2.

SUMMARY

Two fatalities presumably caused by chlordane are reported. The first patient became confused, started having convulsions, and died within a few minutes after an accident in which a suspension of chlordane was spilled on her dress. Nonspecific pathological changes were found in the brain, lungs, and kidneys. The second patient died nine and one-half days after swallowing 6 gm. of chlordane (104 mg. per kilogram of body weight). Clinical features included chemical burns of the mouth, a severe hemorrhagic gastritis. shock, anuria, convulsions, and death. The pathological features were cerebral congestion and edema, lower nephron nephrosis, confluent bronchopneumonia, chemical burns of the mouth, and uremia.

CHEMICAL LABORATORY

DECAFFEINATED COFFEE

The article entitled "Xanthines, Tannins, and Sodium in Coffee, Tea, and Cocoa," which appeared in THE JOURNAL, July 23, 1955, page 1030, reported results for caffeine content of beverages based on a gravimetric procedure. This report stated, among other things, "Advertising that makes claims implying almost total removal of caffeine in decaffeinated coffees must be viewed with skepticism." Further review indicates that the analytical procedure used can lead to inaccurate results in the case of decaffeinated coffees, therefore, the conclusions of the July 23 report of the Chemical Laboratory may have been premature. The Chemical Laboratory is, however, undertaking a further investigation of decaffeinated coffees utilizing a different method of analysis. Until completion of this investigation, any conclusions based on the laboratory's earlier findings relating to decaffeinated coffees should be held in abeyance.

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PREVENTING ACCIDENTAL POISONING

GUEST EDITORIAL

Irvin Kerlan, M.D.

In 1951 accidental poisoning by solid and liquid substances caused 1,497 deaths, of which 411 were in children under 5 years of age. These statistics do not reveal the full picture. They do not point out the staggering number of nonfatal poisonings, which is estimated to be 100 to 150 times the number of fatalities. The public must be awakened to the hazards of misuse of drugs and other household chemicals in a continuing effort to prevent accidents in the home. Poisonings by common household items such as bleaches; cleaning fluid; furniture polish; lye; kerosene; rat and insect poisons; weed killers; medicines including aspirin, methyl salicylate, and boric acid; and cosmetics and toilet goods are particularly tragic since they are preventable. Too often parents have permitted accidental poisoning of their children through carelessness or lack of information. With thought, instruction, and effort they can reduce poisoning risks.

Wider community participation in accident prevention programs can be readily achieved. There is a broad range of possibilities for telling the child-safety story. Especially responsive to furthering the poisoning prevention activities would be youth groups, parent-teacher organizations, women's clubs, and home economists. Among the young people's groups should be mentioned the Boy Scouts, Girl Scouts, Campfire Girls, 4-H Club, and church groups. National health groups are already actively concerned with reducing the accidental poisoning hazards; they include the Red Cross, National Safety Council, medical societies, health departments, and large insurance companies. The Food and Drug Administration through its responsibilities under the Federal Food, Drug, and Cosmetic Act and the Caustic Poisons Law has been close to the problem and has participated in its correction through legal and educational means.

The number of interested groups can be extended to provide protection through community participation in continued accident prevention programs. Local and national public educational mediums such as newspapers, radio, television, films, public speeches, displays, posters, and readily available information in pamphlets, booklets, and leaflets should be employed recurrently to tell this safety story. Each community should develop its own program, depending on local resources.

The number of potentially toxic substances in the home that may be accidentally swallowed is huge and is increasing daily. Recent advances in the production of new chemicals and their ready availability in the home through advanced manufacturing processes, advertising, and marketing increase the need to keep abreast of these new developments, their potentiality for poisoning, and adequate treatment in case of misuse or accidental ingestion. The physician needs much background to be kept informed of the toxic chemicals contained in all of the chemical agents found around the home and the most effective treatment when a mishap may result in poisoning. These needs have led to formation of a Committee on Toxicology by the American Medical Association and development of poisoning control centers.

The American Medical Association through its recently formed Committee on Toxicology is devoting special attention to correcting the accidental misuse of chemical products found in and around the home. The Committee has advanced a five point program to (1) encourage informative labeling and safe packaging, (2) stimulate laboratory and clinical research for antidotes, (3) standardize technical nomenclature, (4) develop criteria for evaluating hazardous substances, and (5) sponsor a sustained educational program. The results of these studies are periodically reported to the profession in THE JOURNAL and other publications that are concerned with health matters. Poisoning control centers have been formed under the sponsorship of local health departments and pediatric societies. Through these centers much already has been learned about the types of substances that are accidentally ingested. Moreover, opportunity has been provided through follow-up home visits to acquaint parents with home safety hints.

CHLOROPHENOTHANE (DDT)—A BLESSING OR A MENACE?

Chlorophenothane (DDT) is produced in greater tonnage than any other insecticide. Although it is cumulative in human adipose tissue, it acts primarily on the central nervous system, producing hyperexcitation, generalized tremors, spastic or flaccid paralysis, and convulsions.[1] Like many other chemicals recently introduced on a large scale, it has been widely used with little regard for possible long-term effects on the human body or effect on beneficial forms of life, and for this reason some observers [2] have sounded a note of alarm. It may be absorbed through the intact skin, respiratory system.

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[1] Pharmacologic and Toxicologic Aspects of DDT (Chlorophenothane U. S. P.), report of Council on Pharmacy and Chemistry, J. A. M. A. **145**: 728-732 (March 10) 1951.

[2] Biskind, M. S.: Public Health Aspects of the New Insecticides, Am. J. Digest. Dis. **20**: 331-341 (Nov.) 1953.

r gastrointestinal tract. Absorption through the skin s negligible unless the skin is very oily or the insecticide s in an oily solution. In the latter case some of the reulting cutaneous irritation may be due to the solvent sed. The chief hazard to the skin is in handling conntrated solutions in the process of diluting them to e strength recommended for spraying. Hayes [3] states at no authenticated case of systemic poisoning followg even heavy dermal or respiratory exposure has been ported. On the other hand, the inert diluents used in e wettable powder are respiratory irritants. It may be fely said, however, that from the standpoint of respirary exposure dusting and aerosol operations are not zardous under ordinary conditions.[1]

For the average person then the greatest potential hazd would result from constant ingestion of small nounts of chlorophenothane that has been sprayed on e fruits and vegetables consumed or that has been desited in the adipose tissue of domestic animals used meat. When chlorophenothane is ingested we must ain consider the toxicity of the solvent and the fact at a digestible solvent increases the rate of absorption the insecticide. Although it cannot be denied that the erage meal consumed in this country contains about 31 ppm of chlorophenothane (dry weight) a person ely ingests more than 0.0026 mg. per kilogram of dy weight per day. Human volunteers have ingested much as 0.5 mg. per kilogram of body weight per y for prolonged periods without injury,[3] and the fatal l dose for man is about 0.5 gm. per kilogram of body ight. Hsieh [4] reported the accidental introduction of % wettable chlorophenothane powder into flour used make dumplings, each of which contained about 286 of chlorophenothane. Eleven members of a family one or more dumplings, and three reported no sympns, while the rest complained of sweats, tremors, miting, headache, and/or convulsions. They were en saline enemas and magnesium sulfate by mouth, d all were well within two days.

Chlorophenothane is detoxified in the liver and exted slowly in the urine over a period of two weeks more. Hayes [3] states that the degree of exposure n be measured quantitatively by determining the retion of the acetic acid derivative of chlorophenone in the urine. The margin of safety is wide because en a large dose is ingested much of it is eliminated by miting, and of that which remains relatively little is sorbed.

When a large dose of chlorophenothane is known to ve been ingested, the patient should be treated with vage followed by a saline purge, and fats should be oided until the danger is over. Anyone whose occution brings him into contact with powdered chloroenothane should wear a respirator, or, if he must ndle chlorophenothane in an oily solution, he should ear impervious gloves and other protective clothing. bout the house, chlorophenothane should never be kept in the medicine chest, and, if the kitchen must be sprayed, all food, utensils, and table tops should be covered. Toys, cribs, nurseries, and sickrooms should not be sprayed.[1]

In the light of recent reports, Biskind's [2] claim that the facts regarding chlorophenothane have been concealed, suppressed, denied, and distorted no longer holds true. Too many persons are willing or eager to attribute an increase in certain illnesses or an otherwise unexplained death to an exposure to some new chemical hazard without matching the patient's signs and symptoms with the known effects of poisonous doses of the chemical or determining the degree of the patient's exposure.[5] Under the current administrative setup, the Department of Agriculture discusses the hazards of handling all new insecticides with the Public Health Service and requests the Food and Drug Administration to evaluate the hazards resulting directly or indirectly from residues on foods.[6] In the case of chlorophenothane, it is safe under ordinary conditions of legitimate use and definitely safer than such insecticides as arsenic, nicotine, and sodium fluoride.

COBALT AND THYROID FUNCTION

A communication describing the enlargement of the thyroid gland during the administration of a cobalt salt was recently published in The Journal.[1] In effect it suggested the need for caution if this cobalt is used, even though a number of favorable reports on its use in anemia have appeared in the literature. Almost as soon as The Journal communication appeared questions were raised concerning its clinical significance. As a result four papers were submitted for publication, and these appear elsewhere in this issue (see pages 1347-1357). They embrace work done on lower animals and observations on human beings. Normally experiments on lower animals are better suited to publication in a more specialized periodical, but in this instance the four articles complement each other in a way that encourages their publication as a group, and they are offered without comment to those readers who are interested in the use of cobalt. Undoubtedly, as often is the case in therapeutics, a difference of opinion has arisen. More work may be in order, or sufficient data may be available now. The Journal is merely presenting recently acquired data, leaving to the reader the privilege of drawing his own conclusions.

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[3] Hayes, W. J., Jr.: Present Status of Our Knowledge of DDT Intoxication, Am. J. Pub. Health **45**: 478-485 (April) 1955.

[4] Hsieh, H. C.: D. D. T. Intoxication in a Family of Southern Taiwan, A. M. A. Arch. Indust. Hyg. **10**: 344-346 (Oct.) 1954.

[5] Princi, F.: Hazards in the Use and Formulation of Insecticides, Wisconsin M. J. **53**: 621-625 (Dec.) 1954.

[6] Ward, J. C.: Toxicity Criteria Used in Judging the Labeling of Pesticides, Am. J. Pub. Health **45**: 723-727 (June) 1955.

[1] Kriss, J. P.; Carnes, W. H., and Gross, R. T.: Hypothyroidism and Thyroid Hyperplasia in Patients Treated with Cobalt, J. A. M. A. **157**: 117 (Jan. 8) 1955.

ORGANIZATION SECTION

SOCIAL SECURITY

In the July, 1955, issue of the World Medical Journal *is a statement on social security by Dr. Louis H. Bauer, secretary general of the World Medical Association. This subject is currently of much interest to doctors in the United States, and Dr. Bauer's statement is reproduced for this reason.*—Ed.

In the field of social security the same struggle seems to go on and on. Governments and social security bodies are on one side and the medical profession on the other.

There is, of course, no more popular issue for politicians than the subject of medical care. It has an emotional appeal that attracts votes. It is easy for politicians to promise the world surrounded by a fence of gold, particularly when they are promising the delivery of the services of another group. That they cannot deliver on their promises does not bother them at all. They can always (and usually do) blame the doctors for any shortcomings of their systems. If the politicians expand benefits and the costs go up, then the doctors are writing too many prescriptions or they are using too expensive drugs, or they are making too many visits. That the broadening of coverage and expansion of benefits cost money never seems to occur to the politicians or if it does they ignore it. It is much easier to blame the doctors and cut expenses through them.

The result is that the directors of these systems strive constantly towards greater control over the medical profession. One only has to review the history of social security and government medicine to realize that the eventual aim of these people is to make the doctors full-time salaried servants of the state or the social security bodies. If they can accomplish this, then they can dictate to the medical profession on every phase of the practice of medicine. They can tell doctors *where* they *must* practice. They can tell them *how* they must practice, that is, how many visits they will make, how many people they will care for, how they will treat them, what they will be paid, etc.

This is no wild prognostication on my part. Several individuals, high in the social security hierarchy, have publicly expressed every one of these aims.

Most of these people are unwilling to listen to suggestion. Everything must be done according to their own warped philosophy.

Doctors wish their patients to have good medical care. They will deliver it if they are given the opportunity to do so. It seems to astound the social security "bosses" that the medical profession feels it is better qualified than any laymen to determine the medical needs of their patients, and how and where they should be treated.

Doctors feel that the patient has an inalienable right to choose his own doctor. Doctors know that the faith of the patient in his doctor is an important asset in treatment. Patients have little confidence in "assembly line" treatment or in a doctor who treats them merely as case numbers and has no time to listen to their stories.

From time immemorial doctors have treated patients as individuals and if they were unable to pay, they have treated them free. Mass treatment given according to hard and fast regulations has no place in the therapeutics of the conscientious doctor. No two cases of the same disease are necessarily treated alike. When laymen, however, exercise control they want everyone treated by a strict formula. They ignore the doctor-patient relationship, even scoff at it as mere sentimentality and of no importance.

It is high time that certain social security planners woke up to the fact that members of the medical profession will refuse to become slaves to a system that is contrary to all their training, to the traditions of their profession, and to philosophy of a free state.

If the social security hierarchy persists in its arbitrary, domineering attitude they will succeed in discouraging persons endowed with ambition and intelligence from entering the medical profession. There is little incentive for a man to enter a profession if he is to receive no more recognition for doing good work than does his colleague for doing poor work; or if his income is to depend entirely upon length of service and political influence; or if he is to be hedged around with arbitrary and often senseless rules and regulations, the infraction of which will result in his being subject to disciplinary action by others than his peers.

All this will result not only in an inferior type of individual entering medicine, but the public will receive an inferior grade of medical care. Research will disappear and progress in medical science will cease.

Advice with reference to a system of medical care is rarely sought by governments and never by social security fanatics from those best qualified to give it. They almost universally ignore the organized medical profession.

The people want and should have the best medical care and the doctors want to give it to them. They have little chance of getting it, however, until governments and social security autocrats come down out of their ivory towers and follow the precept so emphatically stated by the Right Honorable Sir Earle Page, Health Minister of Australia. He said, in substance, that it is impossible to make any system work which does not enlist the cooperation of those who have to carry it out.

Social security has occupied a great part of the attention of delegates to every general assembly. The discussion has not bee as profitable as it might, however, because everyone has endeavored to cover the whole field.

Hence, the Council [of the World Medical Association] recommended that a different approach be adopted at the General Assembly [of the World Medical Association; this be held in September in Vienna]. There will be a general t for discussion. This will be entitled,

"A Realistic Approach to the Economic and Political Asp of Social Security."

A paper on this subject will be presented by the chairm of the social security committee. Then the subject will thrown open to discussion, which will be limited to the foll ing aspects:

1. Cost of Medical Service (Administrative Costs)
2. Cost of Medicaments
3. Cost of Hospitalization
4. Social Security Cash Benefits

The Council is of the opinion that by such an approach, real contribution will result. There certainly should be sufficie facts brought out to demonstrate who or what is responsi for these costs constantly increasing. In my humble opinion will *not* be the medical profession which is found guilty.

It has been suggested to the social security planners ma times before and by many people that housing, clothing, a nutrition have a great influence on the health of the peop Were the social welfare group to concentrate on these fac there would be far less need for medical care. So, too, envir mental sanitation, protection of food, milk, and water su plies, eradication of disease bearing insects are public hea factors that are properly the function of government. If gove ment would spend their time, money, and energy on some of these, they would be doing a great deal for the people, and again making the need for medical care less prevalent.

Such a course, would not only redound to the benefit of the people, but in the long run would be economical. Furthermore, it would be sensible. So, it is too much to expect, particularly as it would have less "vote appeal."

EXCERPTS FROM MINUTES OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS, JUNE 3-6, 1955

The Committee on Essentials of the Council has recommended that the section on "Aims and Objectives of a Training Program" in the "Essentials of an Approved Internship" and the "Essentials of Approved Residencies and Fellowships," be revised to incorporate the following statement:

"Throughout the internship (residency) program, time and thought should be devoted to the inculcation of the concept of medicine as an art and as a calling, the primary purpose of which is the care and treatment of the patient as an individual in addition to the emphasis on scientific and objective studies of disease. In achieving this end, stress should be laid on understanding and evaluating the patient's family relations, his economic and social status and his position in the community. It is only by grasping the importance of the patient as a composite entity that the physician can attain the fullest mastery of his profession. Those charged with the responsibility of training younger physicians must teach them by precept and example, the human as well as the scientific aspects of the lofty discipline of medicine."

The Essentials Committee also recommended that both of the publications indicated above include the following statement in an appropriate place:

"To avoid ambiguity and lack of definiteness, it is recommended that the Standard Nomenclature of Diseases and Operations be used by the medical staff to record the clinical diagnoses of patients."

During the academic year 1954-1955, the liaison survey visits with representation from the Association of American Medical Colleges as well as from the Council on Medical Education and Hospitals were made to the following medical schools in the United States and Canada:

Indiana University
University of Toronto
George Washington University
University of Louisville
St. Louis University
Emory University
Duke University
Western Reserve University
University of Southern California
University of Florida
University of California at Los Angeles
University of California at Berkeley and San Francisco
Seton Hall University
University of Montreal
New York Medical College
Albert Einstein College of Medicine
University of Ottawa
University of Virginia

Howard University was also visited by representation of the Liaison Committee in cooperation with the Middle States Commission on Institutions of Higher Education.

Provisional schedules have been worked out for the medical school survey visits during both 1955-1956 and 1956-1957. During 1955-1956 liaison survey visits will include State University of New York Upstate Medical Center at Syracuse, University of Miami, University of Maryland, Tulane University, Jefferson Medical College, University of Nebraska, Cornell University Medical College, Dartmouth Medical School, McGill University Faculty of Medicine, Queens University Faculty of Medicine, University of Vermont, and University of Alberta Medical Faculty.

At the present time, there are 16 residency review committees in active operation. These committees consist of specialty board representatives with Council representatives who evaluate and recommend regarding the residency training programs submitted for their consideration. Residency review committees of this type have not yet been established with the specialty boards in obstetrics and gynecology, anesthesiology, pathology, or thoracic surgery.

It was reported that the proposed program of the Cooperating Committee for the Evaluation of Graduates of Foreign Medical Schools had been studied by the Law Department of the American Medical Association with the regard to the legality of various aspects of the program. The Law Department's brief indicated the necessity for the Committee to review and possibly modify certain aspects of the proposed program in terms of legal implications with the hope that the objectives of the program may be preserved. In line with this suggestion, a special meeting of the Cooperating Committee was called on June 17 for further study. It is apparent that the original program may need considerable modification and that the Cooperating Committee study should be further pursued toward a satisfactory solution.

The Board of Trustees has approved the recommendation of the Council on Medical Education and Hospitals that a permanent position on the Council staff be created for a continuing study in the field of postgraduate medical education. It is hoped that this post may be filled in the course of the relatively near future.

REPORT ON GUIDING PRINCIPLES FOR EVALUATING MANAGEMENT AND UNION HEALTH CENTERS

The following footnote acknowledging the invaluable assistance of several physicians in the preparation of the "Guiding Principles for Evaluating Management and Union Health Centers" was not included in that portion of the "Abstract of Proceedings of the House of Delegates" appearing on pages 835-838 of the July 9, 1955, issue of The Journal. The Council on Industrial Health and the Council on Medical Service wish to call this footnote to the attention of readers of The Journal to indicate that membership on the committee, together with the special consultants, represented a comprehensive cross section of opinion on the essentials for such guiding principles:

"Members of the Committee on Medical Care for Industrial Workers: Drs. W. A. Sawyer, Chairman, Consultant, International Association of Machinists, Rochester, N. Y.; W. F. Draper, Executive Medical Officer, UMWA Welfare & Retirement Fund, Washington, D. C.; A. C. Scott Jr., Member, Council on Medical Service, Temple, Texas; Frank J. Holroyd, A. M. A. delegate, Princeton, W. Va.; M. N. Newquist, Medical Director, The Texas Company, New York, N. Y.; W. Clark Bailey, Vice-President, A. M. A. and Member, Committee on Legislation, A. M. A., Harlan, Ky.; Frederick M. Slobe, Chairman, Committee on Industrial Health, Illinois State Medical Society, Chicago, Ill.; Edwin P. Jordan, Executive Director, American Association of Medical Clinics, Charlottesville, Va.; Consultants—Drs. John Hinman, Council on Medical Education and Hospitals, and Donald A. Dukelow, Bureau of Health Education, both from the A. M. A., Chicago.

"The preparation of the original draft of these Guiding Principles and their further editorial development were carried out in mutual cooperation by Drs. Leo Price and William Hall Lewis Jr. of New York City. Dr. Price has had experience in this field as Medical Director of the Union Health Center, International Ladies Garment Workers Union; he is a former member of the Committee on Medical Care for Industrial Workers (1949-54); he is now a member of the Commission on Medical Care Plans. Dr. Lewis, an independent practicing physician, has been chairman of the Editorial Board of *New York Medicine* and a member of the Committee on Medical Economics of the Medical Society of the County of New York. The Committee is indebted to them in their capacity as special consultants. This report has been a cooperative undertaking through various conferences of many parties concerned in this development."

FEDERAL MEDICAL LEGISLATION

First Session, 84th Congress

Salk Vaccine

A series of bills on the subject of federal controls for supplying Salk vaccine for poliomyelitis have been introduced in Congress. In S. J. Res. 68 the Secretary of Health, Education, and Welfare would be responsible for "promulgation of mandatory rules and regulations regulating the distribution and use of all Salk vaccine during the temporary national emergency" and reporting to Congress recommendations for further legislation, including price fixing. This measure was sponsored by Senators Ives (R., N. Y.), Beall (R., Md.), Bush (R., Conn.), Case (R., N. J.), Duff (R., Pa.), Flanders (R., Vt.), Humphrey (D., Minn.), Lehman (D., N. Y.), Murray (D., Mont.), Saltonstall (R., Mass.), Watkins (R., Utah), Payne (R., Maine), and Kuchel (R., Calif.) and referred to the Committee on Labor and Public Welfare. Identical measures were introduced in the House by Congressman Gamble (R., N. Y.), in H. J. Res. 299, and Congressman Radwan (R., N. Y.), in H. J. Res. 300, which measures were referred to the Committee on Banking and Currency.

Congressmen Fogarty (D., R. I.), Boland (D., Miss.), and Smith (R., Wis.), in H. J. Res. 297, 298, and 302, respectively, and Senator Kefauver, in H. J. Res. 70, have introduced identical measures, which would direct the Secretary of the Department of Health, Education, and Welfare to establish priorities in age groups to receive the vaccine and establish prices per unit of vaccine and an allocation of vaccine to the states. The House measures were referred to the Committee on Banking and Currency and the Senate measure to Committee on Labor and Public Welfare.

Congressman Davidson (D., N. Y.), in H. R. 5983, would, (1) give the President stand-by power to (*a*) establish priorities and contract manufacturers, (*b*) allocate supplies, (*c*) establish ceiling prices at manufacturer or distributor level with no control of the cost of administering the vaccine, and (*d*) require records to be kept on dates, price, and patients vaccinated; (2) make the present provisions as to violations of the Defense Production Act applicable to violations of this act; and (3) make the present law regarding hoarding and accumulation applicable to vaccine. This measure was referred to the Committee on Banking and Currency. Congressman Keating (R., N. Y.), in H. J. Res. 301, would authorize the appropriation of the one million dollars for purchase of Salk vaccine for children whose parents were unable to pay for Salk vaccine inoculations. This measure was referred to the Committee on Interstate and Foreign Commerce.

Senator Hill (D., Ala.), in S. 1925, would "authorize and empower the President to provide for prompt, fair, and effective distribution and use of poliomyelitis vaccine for the purpose of preventing abuses and safeguarding the public interest." This would authorize the President to (1) establish classification and priorities for Salk vaccine; (2) require records by manufacturers, distributors, and persons dispensing vaccine; (3) provide for sale at reasonable prices; (4) provide for purchase and free distribution for immunization purposes; and (5) designate or create new agencies to carry out purposes of this legislation. Section 6 of the bill provides that "any person who willfully performs any act prohibited, or willfully fails to perform any act required by any rule, regulation, or order promulgated under the authority of this Act shall, upon conviction, be fined not to exceed $10,000 or imprisoned for not more than one year, or both." This bill was referred to the Committee on Labor and Public Welfare.

The administration's measure authorizing the appropriation of funds for grants-in-aid programs for immunization to poliomyelitis for children whose families were unable to pay was introduced by Senator Smith (R., N. J.), in S. 1984; Senator Hill (D., Ala.), in 1989; Congressman Priest (D., Tenn.), in H. R. 6286; Congressman Wolverton (R., N. J.), in H. R. 6287; and Congressman Burnside (D., W. Va.), in H. R. 6426. This measure would not prevent the state from setting up free vaccination programs for all. An authorization of 28 million dollars, available until Dec. 31, 1956, is provided in the bill. The administration subsequently agreed to raise this amount to 35 million dollars. The allotments to the state would be determined on the basis of the relative population under age 20 and the state's per capita income. The state with the lowest per capita income would receive enough money to pay for vaccine for 41% of its children. The state with the highest per capita income would receive enough for 15%; and the state with average income enough for 20%. The Senate bills were referred to the Committee on Labor and Public Welfare and the House bills to Committee on Interstate and Foreign Commerce.

Senators Hill (D., Ala.), Murray (D., Mont.), Neely (D., W. Va.), Douglas (D., Ill.), Lehman (D., N. Y.), Kennedy (D., Mass.), and McNamara (D., Mich.), in S. 2147, would make Salk vaccine available free to any community on condition that free vaccination would be available to all children whose parents desire free vaccination. The state would be required to provid that professional medical service would be available to administer the vaccine at no cost to all children whose parents di not want to pay the fees to private physicians for the servic An unlimited appropriation would be authorized. This bill w referred to the Committee on Labor and Public Welfare. Co gressman Rodino (D., N. J.), in H. R. 5987, would amend t Defense Production Act to give the President authority to quire manufacturers to fulfill selected orders for Salk vaccine preference to other orders for such vaccine and "to allocate Salk vaccine in such manner, upon such conditions, and to such extent as he shall deem necessary or appropriate to promote the public welfare. All the authority conferred in the Act would terminate June 30th, 1957." This bill is identical with H. R. 5599 (Rains, D., Ala.), 5611 (Celler, D., N. Y.), and 5696 (Addonizio, D., N. J.), previously reported. These bills were referred to the Committee on Banking and Currency.

Congressman Shelley (D., Calif.), in H. R. 6021, proposes to establish an emergency commission to insure the most effective and equitable distribution of Salk vaccine. The commission could recommend price-fixing legislation. This bill is identical with S. 1691, previously reported in THE JOURNAL, June 18, 1955, page 568. Congressman Tumulty (D., N. J.), in H. R. 6056, proposes to reimburse the states for the cost of Salk poliomyelitis vaccine used in a plan approved by HEW providing that 75% of the children eligible have been inoculated under the state plan. This bill was referred to the Committee on Interstate and Foreign Commission. Congressman Patterson (R., Conn.), in H. R. 6120, would direct the Secretary of the Department of Health, Education, and Welfare to establish priorities in age groups to receive the vaccine and prohibits the sale of vaccin "upon terms or conditions in conflict with the applicable pro gram established by the health department of a state." Violatio would be punishable by a fine of not more than $5,000 or im prisonment for not more than two years or both.

After the voluminous and confusing mass of bills listed abo were introduced and the clamor for them quieted down som what, two bills were reported out of committee, one in t House, H. R. 7126, by Congressman Priest (D., Tenn.). Th was a new bill developed after hearings were held on precedi bills. In the Senate S. 2501 was also a new bill following he ings on other Salk vaccine bills. This was introduced by Senat Hill (D., Ala.), Smith (R., N. J.), Murray (D., Mont.), I (R., N. Y.), Neely (D., W. Va.), Purtell (R., Conn.), Doug (D., Ill.), Bender (R., Ohio), Lehman (D., N. Y.), Allott (Colo.), Kennedy (D., Mass.), and McNamara (D., Mich.). House bill from the Committee on Interstate and Foreign C merce would authorize the Department of Health, Educat and Welfare to make allotments to the states to consist of an unmatched grant based upon 25% of the number of vaccinated eligible persons in the state multiplied by the pro of the cost of vaccine and the state's relative per capita inc (2) a 50-50 matching grant to cover the cost of additional p myelitis vaccine, (3) an additional 20% of the above tw administrative expenses. The Senate bill would amend the P Health Law on general grants to states to authorize out grants without matching to the states for the purchase of vaccine for children under 20 and expectant mothers. If gress does not vote enough money to pay for vaccine f eligibles, the surgeon general will prorate whatever is avai taking into account disease incidence in the state as well a per capita income and population. If the state does not p a program for all eligibles, the state would be required to c with priorities established by the surgeon general.

From the Washington Office of the American Medical Association.

MEDICAL NEWS

CALIFORNIA

Society News.—Dr. Alton Ochsner, professor of surgery, Tulane University of Louisiana School of Medicine, New Orleans, will discuss "Carcinoma of the Lung" and Dr. Edward H. Rynearson, professor of medicine, Mayo Foundation, Rochester, Minn., "Radioactive Iodine in the Treatment of Hyperthyroidism" at the meeting of the Alameda-Contra Costa Medical Association, given under the auspices of the staff of the Samuel Merritt Hospital, Aug. 25, 8:15 p. m., at Hunter Hall, 1025 Second Ave., Oakland (TEmplebar 6-2622).

UCLA Medical Center.—The final major step in the development of the new medical center of the University of California at Los Angeles took place July 6, with the opening of the 320-bed teaching hospital. Constructed at a cost of 21 million dollars, the new center combines in one physical plant the schools of medicine and nursing, research facilities, a teaching hospital, outpatient departments, and a biomedical library, which joins it to the new Life Science Building. Creation of the U. C. L. A. Medical Center began in 1946 when the California legislature appropriated funds. The school section of the center was opened last fall, when the schools of medicine and nursing moved in from temporary quarters. On June 19 the medical school graduated its first class.

CONNECTICUT

Symposium on Industrial Health.—The following symposium on industrial health will be presented at the main hospital of the United States Rubber Company, Water Street, Naugatuck, at 2 p. m. on Sept. 22 under the auspices of the committee on industrial health, Connecticut State Medical Society. The program will be moderated by Dr. Alphonse Della Pietra, consulting orthopedic surgeon of the company and attending orthopedic surgeon, St. Mary's Hospital, Waterbury.

Low Back Conditions Found on Preemployment Physical Examination as Related to Industrial Liability, David M. Bosworth, New York.
Treatment of Hip Injuries, Frederick R. Thompson, New York.
Secondary Repair in Severe Industrial Hand Injuries, J. William Littler, New York.
Hematic and Neoplastic Health Hazards in the Rubber Industry, Wilhelm C. Hueper, Bethesda, Md.

DISTRICT OF COLUMBIA

Doctors' Orchestra.—The newly organized Doctors' Orchestra of Washington, D. C., is open to doctors, dentists, veterinarians, nurses, and their families. President of the group is Dr. Richard H. Todd; vice-president and concert master, Dr. Isadore M. Alpher. The first rehearsal was held recently under the baton of Howard Mitchell, conductor of the National Symphony Orchestra.

Personal.—Dr. John W. Cronin, chief, division of hospital facilities, U. S. Public Health Service, was given an honorary degree of doctor of science on June 6 by Miami University, Oxford, Ohio.——Georgetown University, Washington, D. C., has received a gift of $100,000 from Mr. Hugh A. Grant, Bradford, Pa., for a 10 year study of organ culture under the direction of Dr. Robert J. Coffey, professor of surgery.——Dr. Irvin Hantman, Washington, D. C., received the first annual award of the alumni of Episcopal Eye, Ear and Throat Hospital for "distinguished work in otology and diseases of the ear."

ILLINOIS

University News.—Dr. Frederick W. Merrifield, chairman, executive committee, Northwestern University Cleft Lip and Palate Institute, announces that Mrs. Eleanor P. Moses, previously executive secretary, has been appointed administrator of the institute.

Clinics for Crippled Children.—The University of Illinois division of services for crippled children has scheduled the following clinics to which any private physician may refer or bring children for examination or consultative services:

Aug. 17, Alton (Rheumatic Fever), Alton Memorial Hospital; Chicago Heights, St. James Hospital.
Aug. 18, Rockford, St. Anthonys Hospital.
Aug. 23, Peoria, Children's Hospital; Effingham (Rheumatic Fever), St. Anthony's Emergency Hospital.
Aug. 24, Springfield (Cerebral Palsy), Memorial Hospital; Elgin, Sherman Hospital.
Aug. 25, Bloomington, A.M. (General), P.M. (Cerebral Palsy), St. Joseph's Hospital.
Aug. 26, Chicago Heights (Rheumatic Fever), St. James Hospital.

Chicago

University News.—The Max and Leola S. Epstein Foundation has presented the Chicago Medical School with a gift of $150,000 for "support of medical education and medical service."——A grant of $2,000 in support of the Chicago Medical School from the Sidney Hillman Foundation was recently presented to Dr. John J. Sheinin, president of the school, by representatives of the Chicago Joint Board of the Amalgamated Clothing Workers of America.

Parts of Medical Center Completed.—The West Side Medical Center, which has been called "an empire of medical skill," occupies 478 acres, extending from Ashland Avenue to Oakley Boulevard and from the Congress Street Expressway south to the railroad tracks at 14th and 15th streets. It includes Cook County Hospital, Presbyterian Hospital and school of nursing, University of Illinois hospital and colleges of medicine, dentistry and pharmacy, Loyola University schools of medicine and dentistry, Chicago Medical School, and many new facilities erected since the district was created by the state legislature in 1941. During the last four years 15 major projects, representing building costs of 45.5 million dollars, have been completed on land made available by the Medical Center Commission. These include the east Dental-Medical-Pharmacy Building, University of Illinois; the William Healy Residential School for Children; the Chicago State Tuberculosis Sanitarium; Cook County Hospital Dormitory for Interns; Veterans Administration Hospital; Cook County Graduate School of Medicine; and numerous offices and residential and administrative projects. Among the earliest buildings to be erected were Cook County Hospital (1875) and Rush Medical College (1876). Presently under construction is the Loyola University Stritch School of Medicine and College of Dentistry Building.

MARYLAND

Society News.—Newly elected officers of the radiological section of the Baltimore City Medical Society include: Dr. Walter L. Kilby, Baltimore, chairman, and Dr. Nathan B. Hyman, Baltimore, secretary-treasurer.

Dr. Rysanek Honored.—At a dinner honoring his 50th anniversary of general practice, Dr. William J. Rysanek Sr., Baltimore, received special greetings from Mayor D'Alesandro, who designated him as "an honored and outstanding citizen of Baltimore" and from Dr. Huntington Williams, Baltimore, commissioner of health, who wrote: "Such a splendid life of unselfish devotion to the many fortunate persons who have come under your care during these many years is an inspiration to all of us and is a cause for rejoicing on the part of the city of Baltimore." Dr. Rysanek's sons, William J. Rysanek Jr. and Emil J. Rysanek, Baltimore, are physicians.

MASSACHUSETTS

New Harvard Surgical Unit.—With the reestablishment of a surgical unit at the Boston City Hospital and the creation of the new Sears Surgical Laboratory, the Harvard Medical School, Boston, will resume participation in surgical research, teaching, and patient care at the hospital, renewing an affiliation that lasted

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

from the founding of the hospital in 1861 until 1942. The renewal of service was made possible largely by the bequest of Charles H. Tyler, Boston, who in 1931 left a public charitable trust as a memorial to the late Dr. George G. Sears, formerly clinical professor of medicine at Harvard and a trustee of the hospital. The fund now amounts to well over $1,500,000. Dr. J. Englebert Dunphy will be Harvard Professor of Surgery and director of the new unit, which was scheduled to open in July, with Dr. Charles C. Lund as surgeon-in-chief.

NEBRASKA

Personal.—Dr. Benjamin B. Wells, professor of medicine, Creighton University School of Medicine, Omaha, recently served as professor of medicine pro tem at Georgetown University School of Medicine, Washington, D. C., in accordance with a custom of having leading teachers from other schools brought in for a short period to broaden the educational opportunities of the students and house staff. During this period the "pro tem" professor carries on the educational activities of Dr. Harold J. Jeghers, director of the department of medicine.

Institute on Neuromuscular and Rheumatic Diseases.—Creighton University School of Medicine, Omaha, together with the Nebraska State League for Nursing and the Nebraska Arthritis and Rheumatism Foundation, will sponsor an Institute on Rehabilitation of Neuromuscular Diseases and Rheumatic Diseases at Creighton Memorial St. Joseph's Hospital Sept. 8-10. Guest speakers will be Dr. Joseph G. Benton, coordinator of education and research at the Institute of Physical Medicine and Rehabilitation in New York, Dr. William A. Spencer, associate professor of pediatrics, Baylor University College of Medicine, Houston, Texas, and Dr. William D. Robinson, professor of internal medicine, University of Michigan Medical School, Ann Arbor. For information write Dr. Harold N. Neu, Medical Director, Department of Rehabilitation, Creighton Memorial St. Joseph's Hospital, Omaha.

NEW HAMPSHIRE

Workshop on Epilepsy.—A workshop on epilepsy will be held Sept. 14, 10 a. m.-4 p. m., at the New Hampshire Highway Hotel, Concord, under the sponsorship of the state department of health, Crippled Children's Services; state department of education; and the New Hampshire Pediatric Society. Registration may be made through State Department of Health, Crippled Children's Services, 17 Capitol St., Concord.

NEW JERSEY

Medical Director of A. T. and T.—Dr. L. Holland Whitney, Morristown, medical director for New Jersey Bell Telephone Company since 1948, has been appointed medical director for the American Telephone and Telegraph Company. Dr. Whitney was medical director for the Sperry Gyroscope Company in Long Island, N. Y., during World War II. He has been secretary of the Academy of Medicine of New Jersey, a vice-president of the New Jersey Industrial Medical Association, a fellow of the Academy of Medicine of the northern New Jersey section of occupational health, and chairman of the committee on alcoholism for the Essex County Service for the Chronically Ill.

NEW YORK

University News.—The office of administration, State University of New York College of Medicine at New York City, Brooklyn, has moved from 350 Henry St., Brooklyn 1, to 496 Clarkson Ave., Brooklyn 3.

Israel Strauss Lecture.—The first Israel Strauss Lecture, "The Application of the Experimental Method of Psychiatric Therapy," was delivered at Hillside Hospital, Glen Oaks, April 10 by Dr. David McK. Rioch, director of the neuropsychiatric division of the Army Medical Service Graduate School at the Walter Reed Army Hospital, Washington, D. C. These lectures, originally conceived while Dr. Strauss was alive, will now be given as annual memorial lectures. Dr. Morris B. Bender, New York City, is chairman of the lecture committee.

Ciba Award to Dr. Gross.—The 1955 Ciba award for meritorious accomplishments in the field of endocrinology was presented to Dr. Jack Gross, associate professor of anatomy, State University of New York College of Medicine at New York City in Brooklyn, at the annual meeting of the Endocrine Society in Atlantic City, N. J. He was cited for his work on the thyroid gland, since the introduction of radioiodine in the early 1940's, and especially for his isolation of a new iodine compound, triiodothyronine, in human blood. Together with Dr. R. Pitt-Rivers at the National Institute for Medical Research, London, England, Dr. Gross isolated triiodothyronine from the thyroid of cattle, explored its physiological properties, and synthesized it chemically. In addition to a stipend of $1,800, the Ciba award provides $700 for expenses if the recipient wishes to pursue, within two years, special investigative work at a laboratory other than his own. Dr. Gross will take a six month leave from the state university next February, when he hopes to work in the laboratory of Dr. Hans Krebs, Nobel Laureate, at Oxford, England, in studies pertaining to enzymatic reactions involving triiodothyronine.

New York City

Rado Lectureship.—In honor of Dr. Sandor Rado, who has retired from his position as director of the Columbia Psychoanalytic Clinic for Training and Research, a lectureship has been established in the department of psychiatry, Columbia University College of Physicians and Surgeons. On July 1, Dr. Abraham Kardiner succeeded Dr. Rado as director of the clinic.

First Graham Award to Dr. Whipple.—Dr. Allen O. Whipple, professor emeritus of surgery, Columbia University College of Physicians and Surgeons, received the first Graham award for outstanding contributions to surgery at a ceremony, June 6, at Washington University, St. Louis. Funds for the award were set up by associates and former students of Dr. Evarts A. Graham, emeritus Bixby Professor of Surgery at Washington University School of Medicine, St. Louis, at the time of his retirement in 1951. The medal will be awarded every three or four years to the surgeon who, in the opinion of the selection committee, has made the most significant contributions to his profession. Dr. Whipple is director of a new project in which the American College of Surgeons will be associated with the U. S. Foreign Operations Administration in bringing to this country doctors from the NATO countries for training in American hospitals.

Personal.—Dr. Irving B. Goldman has been appointed as attending otolaryngologist for rhinoplasty to the Mount Sinai Hospital. ——Dr. Lewis Robert Wolberg, associate clinical professor of psychology at the New York Medical College, Flower and Fifth Avenue Hospitals, discussed "Modern Trends in Hypnotherapy" before the hospital staff of the Veterans Administration Hospital at Northport, L. I., June 3.——Dr. Oskar Diethelm, professor of psychiatry, Cornell University Medical College, addressed the hospital staff of the Veterans Administration Hospital at Northport, L. I., June 7 and 8, his topics being "Research Methodology and Mental Illness" and "Psychodynamics of Schizophrenia."——Dr. Samuel Weiss, editor-in-chief of the *American Journal of Gastroenterology* since its inception in 1934, was honored on his 70th birthday by the New York Academy of Gastroenterology, which presented him with an illuminated plaque containing a set of resolutions recognizing his 70th birthday and his accomplishments in medicine.——Dr. Joseph Hirsh has been appointed associate professor of preventive and environmental medicine at the new Albert Einstein College of Medicine.——Dr. Howard A. Rusk, chairman, and Eugene J. Taylor, B.S., assistant professor, department of physical medicine and rehabilitation, New York University College of Medicine, have been awarded the Order of Merit José Fernandez Madrid by the government of Colombia. Dr. Rusk and Mr. Taylor, with Capt. Thomas J. Canty, U. S. Navy Hospital, Oakland, Calif., recently conducted clinics, lectures, and demonstrations in Colombia, where they acted as consultants for the new 850-bed military hospital being erected in Bogota.

UTAH

Personal.—Dr. George A. Spendlove, Salt Lake City, director of the Utah State Department of Health since Oct. 3, 1950, recently notified the board of health of his intention to resign.

State Medical Meeting.—The Utah State Medical Association will hold its annual meeting at the Hotel Utah, Salt Lake City, Sept. 8-10. The address of welcome will be delivered by Dr. Charles Ruggeri Jr., Salt Lake City, president, at 8:45 a. m. Thursday. Dr. Elmer Hess, Erie, Pa., President, American Medical Association, will speak at the banquet Friday, 7:30 p. m., on "Medicine—Person to Person." On Saturday at 9:30 a. m. Dr. Hess will present "Treatment of Kidney and Bladder Infections." Dr. Rutherford T. Johnstone, Los Angeles, a member of the Council on Industrial Health of the A. M. A., will discuss "Industrial Medicine" on Thursday at 11:30 a. m. and "Occupational Diseases: Their Diagnostic Approach" Saturday noon. "Malpractice Litigation and Prevention Programs" is the subject that will be considered by Mr. Edwin J. Holman, Chicago, member of the Law Department of the A. M. A. and Executive Secretary of the Judicial Council, Thursday, 3:15 p. m. Other out-of-state speakers and their first presentations include:

Frank Glenn, New York, Surgical Treatment of Biliary Tract Disease.
James S. Shipman, Philadelphia, Some Recent Advances in Cataract Surgery.
Gordon Meiklejohn, Denver, Viral Diseases.
Verne T. Inman, San Francisco, Mechanisms of Deep Somatic Pain—Anatomical and Physiological Observations.
Carlton N. Price, Washington, D. C., Office Gynecology.
Horace E. Campbell, Denver, Automobile Crash Injuries.
H. Russell Fisher, Los Angeles, Role of the Pathologist in Diagnosis and Management of Cancer of the Breast.
Charles L. Eckert, St. Louis, New Approaches in Management of Cancer of the Breast.
Richard H. Chamberlain, Philadelphia, Radiotherapeutic Approaches to Cancer of the Breast.
Danely P. Slaughter, Chicago, Surgical Treatment of Cancer of the Lip and Mouth.
Carlton N. Price, Washington, D. C., Indications for Removal of Female Pelvic Organs.

Dr. Ruggeri will serve as moderator for a round-table luncheon Thursday noon, and Dr. Slaughter will moderate the round-table discussion Friday, 11 a. m. At 12 noon Friday, there will be a round-table luncheon during which there will be a talk on recent advances in cancer research. The Friday session will close with a round-table discussion moderated by Dr. Eckert. The woman's auxiliary will meet simultaneously.

WEST VIRGINIA

Hospital News.—The West Virginia Board of Health recently approved the release of federal funds available under the Hill-Burton Act for four hospital projects in the state: Charleston General Hospital, four-story nurses' home, $418,566; Ohio Valley General Hospital, Wheeling, additional portion of funds heretofore appropriated for a chronic ward and mental wards, $339,820; Wheeling-Ohio County Health Center appropriation toward a new two million dollar building, $125,900; and Elizabeth Coplin Leonard Memorial Hospital, Buckhannon, 10-bed addition and new operating room and laboratory, $230,100.

Health Education Workshop.—The 4th Annual Health Education Workshop and the 31st Annual State Health Conference of the West Virginia Public Health Association will be held at the Daniel Boone Hotel, Charleston, Sept. 7-9. The theme for the workshop will be "Current Developments in Health Education in West Virginia" and the conference theme, "What Is Happening in Public Health in West Virginia?" Executive directors of state voluntary health agencies will appear on the program being prepared for the workshop. Subjects to be discussed include "Current Status of Public Health in West Virginia" and "Local Responsibility for Providing Local Health Services." One of the main topics for discussion at the State Health Conference will be "Current Problems in Maternal and Child Health." Speakers will include Miss Ruth Taylor, chief, nursing section, Children's Bureau, and Dr. Samuel M. Wishik, professor of maternal and child health, graduate school of public health, University of Pittsburgh.

GENERAL

Heart Association Research Grants.—The American Heart Association and its affiliates have jointly awarded grants-in-aid totaling $723,972.45 to 149 scientists engaged in research in the field of heart and blood vessel diseases. The new grants, which are additional to 110 fellowship awards announced earlier this year, bring the total allocated by the association to underwrite scientific research during the year that began July 1 to $1,418,972. The association and its affiliates have allocated almost 11 million dollars for research support since the association became a voluntary health agency in 1948.

Abstracts for Meeting of Psychosomatic Society.—The American Psychosomatic Society, which will hold its 13th annual meeting at the Sheraton Plaza Hotel, Boston, March 24-25, 1956, requests that titles and abstracts of papers for consideration for the program be received no later than Dec. 1. Abstracts should be submitted in sextuplicate, for the program committee's consideration, to the chairman, Dr. Stanley Cobb, 551 Madison Ave., New York 22. Other members of the committee are Drs. Carl Binger, Cambridge, Mass.; Daniel H. Funkenstein, Boston; Theodore Lidz, New Haven, Conn.; I. Arthur Mirsky, Pittsburgh; and Harold G. Wolff, New York.

"Sight-Saving Month."—Plans for the fifth annual September "Sight-Saving Month" campaign to mobilize efforts against the increasing threat of blindness in this country have been announced by Dr. Franklin M. Foote, executive director of the National Society for the Prevention of Blindness (1790 Broadway, New York 19). According to Dr. Foote, blindness in the U. S. has reached the rate of more than 27,000 new cases annually. During the 1955 September campaign, the nation's radio, television, newspapers, magazines, and transit advertising companies will contribute time and space to various forms of sight-saving messages. Publications on eye care for children and adults are available from the National Society for the Prevention of Blindness.

Awards and Fellowships in Endocrinology.—The Endocrine Society announces that nominations for the medal of the Endocrine Society, the Ciba award, and the Ayerst, McKenna and Harrison Fellowship may be submitted by any member of the society on forms obtainable from the Office of the Secretary, 1200 N. Walker St., Oklahoma City 3, which should be returned, completed, to the secretary, not later than Nov. 1. The Ciba award, to recognize meritorious accomplishments in the field of clinical or preclinical endocrinology by an investigator not more than 35 years of age, is now $1,800. If within 24 months the recipient should choose to use the award toward further study in a laboratory other than that in which he is at present working, it will be increased to $2,500. The Ayerst, McKenna and Harrison Fellowship, established in 1947, is designed to assist men or women of exceptional promise in furthering their advancement toward a career in endocrinology. The fellowship is awarded in alternate years; e. g., 1955, 1957. The stipend, which will not exceed $5,000, may be divided into two fellowships in varying amounts in accordance with the qualifications of the appointees. Individuals with the M.D. or Ph.D. degree, or candidates for either of these degrees, are eligible for appointment. Proposals for appointments as scholars of the Endocrine Society should be made in writing by the applicant and sent to the secretary of the society by Nov. 1. Notice of awards to successful nominees and applicants will be made not later than Dec. 1.

Surgeons Meeting in Philadelphia.—The United States and Canadian sections of the International College of Surgeons will hold their 20th annual congress at the Convention Hall in Philadelphia Sept. 12-15. Dr. Arnold S. Jackson, Madison, Wis., is president of the U. S. section, and Dr. Lyon H. Appleby, Vancouver, B. C., is president of the Canadian section. Dr. Moses Behrend, Philadelphia, serves as general chairman of the congress and Dr. Harry E. Bacon, Philadelphia, as chairman of the program committee. Among the speakers at the opening assembly will be Joseph S. Clark Jr., mayor of Philadelphia; Dr. W. Edward Chamberlain, president of the Philadelphia County Medical Society; and Dr. Temple S. Fay, professor and head of the department of neurosurgery, Woman's Medical

New Hampshire Medical Society, Mt. Washington Hotel, Bretton Woods, Sept. 29-Oct. 1. Dr. Warren H. Butterfield, 18 School St., Concord, Secretary.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls, Tex., Sept. 17. Dr. E. C. Bebb, Broad St., Wichita Falls, Tex., Chairman.

Oregon State Medical Society, Hotel Heathman, Portland, Sept. 28-Oct. 1. Dr. Richard R. Catter, 1020 S.W. Taylor St., Portland 5, Secretary.

Pacific Dermatologic Association, Mexico, D. F., Mexico, Aug. 22-24. Dr. Ben A. Newman, 436 N. Roxbury Drive, Beverly Hills, Calif., Secretary.

Pennsylvania, Medical Society of the State of, William Penn Hotel, Pittsburgh, Sept. 18-23. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

Postgraduate Assembly in Endocrinology and Metabolism, Indianapolis, Sept. 26-Oct. 1. Dr. John J. Mahoney, Assistant Dean, Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis 7.

Regional Meetings, American College of Physicians:

Jamestown, N. D., Sept. 10. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

Reno Surgical Society, Reno, Nev., Aug. 18-20. Dr. James R. Herz, 509 Humboldt St., Reno, Nev., Secretary.

Rocky Mountain Radiological Society, Shirley-Savoy Hotel, Denver, Aug. 18-20. Dr. John H. Freed, 4200 East 9th St., Denver 20, Secretary.

Society of General Physiologists, Marine Biological Laboratory, Woods Hole, Mass., Sept. 9-10. Dr. A. M. Shanes, National Institutes of Health, Bethesda 14, Md.

Southwestern Surgical Congress, Muehlebach Hotel, Kansas City, Mo., Sept. 5-7. Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secretary.

Tennessee Valley Medical Assembly, Read House, Chattanooga, Tenn., Oct. 3-4. Dr. Harry E. Jones, 109 Medical Arts Bldg., Chattanooga 2, Tenn., Secretary.

U. S. Chapter, International College of Surgeons, Convention Hall, Philadelphia, Sept. 12-15. Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago 10, Secretary.

Utah State Medical Association, Union Bldg., Salt Lake City, Sept. 8-10. Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2, Executive Secretary.

Vermont State Medical Society, Mt. Washington Hotel, Bretton Woods, N. H., Sept. 29-Oct. 1. Dr. James P. Hammond, 337 South St., Bennington, Secretary.

Washington State Medical Association, Olympic Hotel, Seattle, Sept. 11-14. Dr. Frederick A. Tucker, 1309 Seventh Ave., Seattle 1, Secretary.

Western Association of Railway Surgeons, Las Vegas, Nev., Sept. 22-24. Dr. Leo L. Stanley, 1322 Fifth Ave., San Rafael, Calif., Secretary.

West Virginia State Medical Association, White Sulphur Springs, Aug. 18-20. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

FOREIGN AND INTERNATIONAL

Australasian Medical Congress, Sydney, N.S.W., Australia, Aug. 20-27. For information write: Federal Council of the B.M.A. in Australia, 135 Macquaire St., Syndey, N.S.W., Australia

Canadian Society for the Study of Fertility, Royal York Hotel, Toronto, Ont., Canada, Oct. 6-8. Dr. Earl R. Plunkett, 469 Waterloo St., London, Ont., Canada, Secretary.

Congress of International Association of Limnology, Helsinki, Finland, July 26-Aug. 7, 1956. For information address: Dr. H. Luther, Snellmansgatan 16 C 36, Helsinki, Finland.

Congress of International Society for Research on Anesthesia, Miami Beach, Fla., U.S.A., Mar. 12-15, 1956. For information write: Dr. R. J. Whitacre, 13951 Terrace Road, Cleveland 12, Ohio, U. S. A.

Congress of International Union of Railway Medical Services, Dubrovnik, Yugoslavia, Sept. 19-24. Dr. Jovanovic, Head Office, Yugoslav Railway, Belgrade, Yugoslavia, President.

Congress of International Union Against Venereal Diseases, Naples, Italy, Sept. 25-28. For information address: Prof. Monacelli, University of Naples, Dept. of Dermatology, Naples, Italy.

International Academy of Legal and Social Medicine, Plenary Conference, Genoa, Italy, Oct. 13-17. Prof. Domenico Macaggi, Institut de Medicine legale, Universite de Genes, Genes, Italy, President.

International Conference of Medical Librarians and Reference Librarians, University Hall, Brussels, Belgium, Sept. 10. For information address: Miss Ch. de Looze, Librarian % Oeuvre Nationale Belge de Defense contra la Tuberculose, 56, rue de la Concorde, Brussels, Belgium.

International Conference on Radiobiology, Cambridge, England, Aug. 14-17. For information write: Dr. Barbara E. Holmes, Dept. of Radiotherapeutics, Univ. of Cambridge, Downing St., Cambridge, England.

International Congress of Allergology, Rio de Janeiro, Brazil, S. A., Nov. 6-13. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7e, France, Secretary General.

International Congress of Angiology and Histopathology, Fribourg, Switzerland, Sept. 2-5. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8e, France.

International Congress of Criminology, London, England, Sept. 11-18. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

International Congress of European Society of Haematology, Freiburg i,Br., Germany, Sept. 20-24. Prof. Dr. L. Heilmeyer, Hugstetter Strasse 55, Freiburg i,Br., Germany, Chairman.

International Congress of International College of Surgeons, Buenos Aires, Argentina, S. A., Nov. 19-24, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

International Congress of International Society of Bronchoesophagology, Buenos Aires, Argentina, S. A., Oct. 28-29. Dr. Juan Carlos Arauz, Cangallo 4015, Buenos Aires, Argentina, S. A., Secretary General.

International Congress of Librarianship and Documentation, Brussels, Belgium, Sept. 11-18. For information write: Dr. A. C. Breycha-Vauthier, Librarian, United Nations, Geneva, Switzerland.

International Congress of Medical Professional Jurisdiction, Medical Ethics, and Comparative Medical Law, Paris, France, Sept. 30-Oct. 3. Dr. J. R. DeBray, Conseil National de L'Ordre des Medécins, 60, Boulevard Latour-Maubourg, Paris 7e, France, Secretary General.

International Congress of Military Medicine and Pharmacy, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, International Committee of Military Medicine and Pharmacy, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

International Congress of Neo-Hippocratic Medicine, Montecatini, Terme, Italy, May 20-22, 1956. Prof. P. Delore, 13 rue Jarente, Lyon, France, Secretary-General.

International Congress of Neuropathology, London, England, Sept. 12-17. Dr. W. H. McMenemey Maida Vale Hospital for Nervous Diseases, London, W.9, England, Secretary.

International Congress of Paediatrics, Copenhagen, Denmark, July 22-27, 1956. Professor P. Plum, Rigshospitalet, Copenhagen, Denmark, President.

International Congress of Physical Medicine, Copenhagen, Denmark, August 20-24, 1956. Dr. B. Strandberg, Kobenhavns amts sygehus i Gentofte, Dept. of Rheumatology and Physical Medicine, Hellerup, Denmark, Honorable Secretary.

International Congress of Radiology, Mexico, D. F., Mexico, July 22-28, 1956. Dr. Jose Noriega, Tepic 126 (2e piso), Mexico, D. F. 7, Mexico, Secretary General.

International Congress on Urinary Lithiasis, Evian, France, Sept. 2-4. Mr. Rossollin-Grandville, Direction Cachet, Evian (Hte-Savoie), France, Secretary General.

International Congress of World Confederation for Physical Therapy, New York, New York, U. S. A., June 17-23, 1956. For information address: Miss Mildred Elson, American Physical Therapy Association, 1790 Broadway, New York 19, New York, U. S. A.

International General Medical Congress, University of Rosario Medical College, Rosario, Argentina, S. A., Nov. 7-12. Dean Jose Imhoff, Santa Fé 3100, Rosario, Argentina, S. A., Chairman.

International Medical Congress, Verona, Italy, Sept. 1-4. For information write: c/o Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

International Office of Documentation of Military Medicine, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

International Physiological Congress, Brussels, Belgium, July 29-Aug. 5, 1956. For information address: Prof. J. Reuse, Faculte de Medicine et de Pharmacie, 115 Boulevard de Waterloo, Brussels, Belgium.

International Society for the Study of Biological Rhythms, Stockholm, Sweden, Sept. 15-17. For information write: Prof. Ture Petrén, Karolinska Institutet, Stockholm 60, Sweden.

International Vitamin E Congress, Cini Foundation, Island of San Giorgio Maggiore, Venice, Italy, Sept. 5-8. Prof. Emilio Raverdino, via Pietro Verri 4, Milano, Italy, Secretary.

Neuroradiologic Symposium, London, England, Sept. 13-17. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

Pan American Congress of International College of Surgeons, Mendoza City, Argentina, S. A., Oct. 22-26. For information address: Secretary, Caseros Av. 2154, Buenos Aires, Argentina, S. A.

Pan American Congress of Ophthalmology, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, Secretary General.

Pan American Congress on Rheumatic Diseases, Rio de Janeiro and Sao Paulo, Brazil, S. A., Aug. 14-20. For information write: Dr. Waldemar Bianchi, 126 Avenida Franklin D. Roosevelt, Rio de Janeiro, Brazil, S. A.

Pan American Medical Social Convention, Bogota, Colombia, S. A., Oct. 15-22. Dr. Leopoldo E. Araujo, Avenida de los Presidentes Num. 506, Apartado 2589, La Habana, Cuba, Secretary.

Pan American Medical Women's Alliance, Santiago, Chile, March 6-13, 1956. For information address: Dr. Eva Cutright, 458 Beall Ave., Wooster, Ohio, U. S. A.

Venezuelan Congress of Medical Sciences, Caracas, Venezuela, S. A., Nov. 18-26. Dr. A. L. Briceno Rossi, Apartado 4412, Ofic. del Este, Caracas, Venezuela, S. A., Secretary General.

World Congress of Anesthesiologists, Scheveningen, Netherlands, Sept. 5-10. For information write: Mr. W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven, Netherlands.

World Congress on Fertility and Sterility, Naples, Italy, May 18-26, 1956. For information address: Prof. G. Tesauro, S. Andrea della Dame, 19, Naples, Italy.

World Federation for Mental Health, Istanbul, Turkey, Aug. 21. For information write: Miss E. M. Thornton, 19 Manchester St., London, W.1, England.

World Medical Association, Vienna, Austria, Sept. 20-26. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

CALIFORNIA: *Written.* Los Angeles, Aug. 22-25; and Sacramento, Oct. 17-20. *Oral and Clinical Examinations for Foreign Medical School Graduates.* Los Angeles, Aug. 21; and San Francisco, Nov. 13. *Oral Examination for Reciprocity Applications.* Los Angeles, Aug. 20; and San Francisco, Nov. 12. Sec., Dr. Louis E. Jones, Room 536, 1020 N St., Sacramento.

MONTANA: *Examination and Reciprocity.* Helena, Oct. 4-5. Sec., Dr. Sidney A. Cooney, 7 West 6th Ave., Helena.

NEW HAMPSHIRE: *Examination and Reciprocity.* Concord, Sept. 14. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW MEXICO:* *Examination and Reciprocity.* Santa Fe, Nov. 21-22. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave., Santa Fe.

OHIO: *Endorsement.* Columbus, Aug. 29-30 and Oct. 3-4. Sec., Dr. H. M. Platter, Wyandotte Bldg., Columbus 15.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. John E. Kennedy, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

COLORADO: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

MICHIGAN: *Examination and Endorsement.* Detroit and Ann Arbor, Oct. 14-15. Sec., Mrs. Anne Baker, 410 W. Michigan Ave., Lansing 15.

OKLAHOMA: *Examination.* Oklahoma City, August 26-27. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

TEXAS: *Examination.* Various cities to be determined by number of applicants from the various areas, October. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

WISCONSIN: *Examination.* Madison, Sept. 23; Milwaukee, Dec. 3. Sec., Mr. William H. Barger, 621 Ransom St., Ripon.

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

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*Basic Science Certificate required.

MAGAZINE–TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Monday, August 15

NBC-TV, 9 p. m. EDT. "Medic" continues its summer reruns with a repeat of last season's "Dr. Impossible."

MAGAZINES

Ladies' Home Journal, August, 1955

"Fountain of Fellowship for Former Mental Patients," by Margaret Hickey

Fountain House in New York City is a "social center for former mental patients trudging a hard road back to recovery. . . . Over 1000 former patients have belonged to the club in the past seven years and less than 4 per cent of them ever had to return to a mental ward."

Sports Illustrated, August 1, 1955

"Austria's Fountain of Youth," by Paul Deutschman

"The European institution of the spa or watering-place where well-heeled people come a month or so each year to be sprayed, irrigated, vaporized and generally made over by natural waters, has no real counterpart in America today." The author reports on Bad Gastein, 60 miles from Salzburg, where the specialty is "revitalization of abused or disused tissue. . . . There are five specific Gastein cures: the thermal baths and drinking cure for overall revitalization; the vapor baths for localized treatments; the underwater therapy for aftereffects of paralysis; and the amazing thermal gallery for intense treatments."

Town Journal, August, 1955

"How Some Towns Get Doctors," by Clyde Hostetter

A report on the success of the "Kansas Plan" for getting doctors to practice in rural communities. In conclusion, the article says: "If you think [similar action] is needed in your town and state, write for information to: Council on Medical Service, American Medical Association . . . or get in touch with your state medical association."

Good Housekeeping, September, 1955

"The Family Medicine Chest," by Maxine Davis

Good Housekeeping's medical reporter outlines eight suggestions for keeping a proper medicine chest. Points included range from a list of "must" supplies to warnings against keeping medicines too long and against giving drugs to others who seem to have the same condition for which the medication was prescribed.

Pageant, September, 1955

"Are You Capable of Suicide?" by Irwin Ross

"You can help to prevent suicide by being aware of its causes and of the tell-tale signs which usually indicate the suicide-prone. . . . If you think someone you know is greatly depressed, is brooding excessively, is unnaturally concerned with morbid thoughts and death, if you think he is possibly suicidal, get professional help for him quickly."

"TB: The Return of a Killer," by Henry Lee

"The false belief that TB is 'nothing to worry about anymore' threatens the health of all of us." The author quotes Dr. Richard R. Trail, rehabilitation chairman of the International Union Against Tuberculosis, as saying: "When death occurs, a tuberculosis case ceases to be a danger to the public health. But the public does not yet realize that every decline in the death rate means a certain added increase to the infectious rate."

Parade, July 31, 1955

"The Patients Who Drive Us Crazy," by Dr. Keith Hammond

An Indiana physician "sticks his neck out (in a friendly way) to list 10 irritating 'office types.'" Dr. Hammond says he made up the catagories "not in malice, or to point the finger at specific individuals, but in the belief that enlightenment breeds good will."

The American Legion Magazine, August, 1955

"Is Dieting Being Overdone?" by Tom Mahoney

Dieting "has been aptly termed 'the great American obsession.'" The author points out that if one is truly obese or definitely underweight, he should seek help but warns against dieting if it is unnecessary. In one section he quotes Dr. James R. Wilson, former Secretary of the American Medical Association's Council on Foods and Nutrition, as saying: "Special diets must be tailored to fit the specific needs of individual people. Therefore, diagnosis is essential before a proper diet can be formulated. This can be done only by a physician."

DEATHS

Schiller, Alfred Albert, Chicago; born in Chicago Jan. 17, 1916; University of Illinois College of Medicine, Chicago, 1942; served an internship in the navy and later engaged in aviation medicine research at the Naval Medical Research Institute at Bethesda, Md.; member of the American Physiological Society, the Society of Experimental Biology and Medicine, the Histamine Club, and the American Association of University Professors; fellow of the Institute of Medicine of Chicago and of the American Association for the Advancement of Science; member of Alpha Omega Alpha and secretary of the Chicago Professional Colleges chapter of Sigma Xi; assistant professor of physiology at his alma mater in 1947 and was named associate professor in 1951; author of many scientific articles; died in Palo Alto, Calif., April 21, aged 39, of pulmonary embolism.

Klepper, Julius Idel ⊕ New York City; born in Romania April 11, 1881; Long Island College Hospital, Brooklyn, 1909; also a pharmaceutical chemist; professor of otolaryngology at the New York Polyclinic Medical School and Hospital; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons and the New York Academy of Medicine; served on the staff of the Manhattan Eye, Ear and Throat Hospital; associate attending otolaryngologist at New York Polyclinic Medical School and Hospital; a draft board examiner during World Wars I and II; in 1929 the Romanian government bestowed on him the Order of Commander of the Crown for his services to Romania; work on behalf of France in this country won him the award of the Palmes Academiques; died June 15, aged 74, of coronary disease.

Neumarker, William Richard Carl ⊕ Columbus, Neb.; born in Luxemburg, Germany, May 18, 1878; Central Medical College of St. Joseph, Mo., 1900; later studied abroad; past vice-president of the Nebraska State Medical Society and the Platte County Medical Society; at one time county physician; served overseas during World War I; one of the two Nebraska delegates at the organization of the American Legion in Paris in 1918; at one time practiced in Edgemont, S. D., where he was a member of the city council and mayor; active in various medical groups in the state, serving on the board of the Crippled Children's Clinic and the board of the Child Saving Institute; surgeon of the Union Pacific Railroad for many years; on the staff of St. Mary Hospital, where he died May 8, aged 76, of ruptured aortic aneurysm.

Seibels, Robert Emmet ⊕ Columbia, S. C.; born in Columbia in 1890; Columbia University College of Physicians and Surgeons, New York City, 1914; specialist certified by the American Board of Obstetrics and Gynecology; charter member and past-president of the South Atlantic Association of Obstetricians and Gynecologists; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; served during World War I; director of the Bob Seibels Jr. Memorial Laboratory; consultant at Columbia Hospital, the South Carolina State Hospital, and Camden (S. C.) Hospital; died in May, aged 64.

Stewart, Howard Coke ⊕ Albany, N. Y.; University of Nebraska College of Medicine, Omaha, 1920; specialist certified by the American Board of Public Health; member of the American Trudeau Society; at one time on the faculty of Vanderbilt University School of Medicine in Nashville, Tenn., and the Johns Hopkins University School of Hygiene and Public Health in Baltimore; member of the tuberculosis division of the state board of health; formerly state epidemiologist for the Tennessee State Health Department; died in Memorial Hospital May 27, aged 57, of cerebral hemorrhage and hypertension.

Allen, Horatio Cushing ⊕ New Bedford, Mass.; Harvard Medical School, Boston, 1901; fellow of the American College of Surgeons; on the staff of St. Luke's Hospital, where he was president of the surgical staff from 1923 to 1931, and where he died June 29, aged 80, of acute peritonitis.

Allen, William Lawson, Rising Star, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, 1915; died June 9, aged 70, of a heart attack.

Beattie, Barbara ⊕ Littleton, N. H.; Cornell University Medical College, New York City, 1924; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics and the New England Pediatric Society; member of the state board of health; on the staff of the Littleton Hospital; died May 23, aged 57.

Birmingham, Eugene Emmett ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; specialist certified by the American Board of Otolaryngology; for many years on the staff of the Illinois Eye and Ear Infirmary; attending surgeon on the staff of Grant Hospital, where he died July 3, aged 75, of cancer.

Bitzer, Emory West ⊕ Hernando, Fla.; University of Virginia Department of Medicine, Charlottesville, 1903; fellow of the American College of Physicians; member of the Association for the Study of Internal Secretions; past-president of the Hillsborough County Medical Society; died in Tampa June 7, aged 72, of cerebral hemorrhage.

Carter, James Daniel, Silver Spring, Md.; Cornell University Medical College, New York City, 1940; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; certified by the National Board of Medical Examiners; served during World War II and was awarded the Navy Cross, Purple Heart, and the Presidential Unit citation; died in Baltimore April 23, aged 38, of subacute glomerulonephritis.

Carter, Norwood William, Holden, La.; Memphis (Tenn.) Hospital Medical College, 1910; died in Baton Rouge May 29, aged 73, of congestive heart failure.

Deardorff, Frank Benson ⊕ Berwyn, Ill.; University of Illinois College of Medicine, Chicago, 1935; founding fellow of the American Academy of Obstetrics and Gynecology; past-president of the medical staff and chief of obstetrics of MacNeal Memorial Hospital, where he died July 12, aged 49, of Banti's disease.

Dixon, Rufus Herbert ⊕ Rockville Centre, N. Y.; Jefferson Medical College of Philadelphia, 1918; on the staff of the South Nassau Communities Hospital; died in Municipal Hospital, Tampa, Fla., June 30, aged 72, of coronary heart disease.

Donovan, William Francis, Bay Head, N. J.; College of Physicians and Surgeons, Medical Department of Columbia College, New York City, 1890; served on the staff of the Monmouth Memorial Hospital in Long Beach; died June 15, aged 85.

Dow, Joseph Abner ⊕ West Topsham, Vt.; University of Vermont College of Medicine, Burlington, 1899; for many years health officer; on the staff of the Barre City (Vt.) Hospital; died in the Mary Hitchcock Hospital in Hanover, N. H., June 10, aged 81.

Duiker, Henry, Traverse City, Mich.; Rush Medical College, Chicago, 1920; member of the Michigan State Medical Society; fellow of the American College of Chest Physicians; on the staff of the Traverse City State Hospital; died June 24, aged 61, of myocardial infarction.

Holtzendorff, Charles F. ⊕ St. Petersburg, Fla.; Medical College of Indiana, Indianapolis, 1895; at one time practiced in Plymouth, Ind., where he was mayor; died April 27, aged 85, of ruptured abdominal aortic aneurysm.

Huckabay, Durward Allison ⊕ Seattle; Tulane University of Louisiana School of Medicine, New Orleans, 1925; member of the American Academy of General Practice; served during World War I; on the staffs of the Maynard Hospital and Columbus Hospital, where he died June 15, aged 53, of coronary thrombosis.

⊕ Indicates Member of the American Medical Association.

Jones, Joseph Francis, Clinton, Ala.; Atlanta (Ga.) College of Physicians and Surgeons, 1902; died March 5, aged 80, of a cerebral accident.

Jones, Robert Young ⊕ Hutchinson, Kan.; Rush Medical College, Chicago, 1907; fellow of the American College of Surgeons; on the staffs of the St. Elizabeth Mercy Hospital and Grace Hospital, where he died July 3, aged 73, of cerebral thrombosis.

Kahan, Harry Leo ⊕ Gary, Ind.; Indiana University School of Medicine, Indianapolis, 1919; served during World War II; on the staff of the Methodist Hospital until his retirement; died in Tucson, Ariz., July 1, aged 60, of coronary disease.

Katherman, Charles Augustus ⊕ Sioux City, Iowa; Rush Medical College, Chicago, 1906; served in France during World War I; died June 10, aged 77, of cerebral thrombosis.

Kelly, John Edward ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1927; member of the Industrial Medical Association; on the staff of the Syracuse General Hospital, where he died July 3, aged 55, of myocardial infarction.

Kirkendall, Henry Laing ⊕ Worcester, Mass.; Long Island College of Medicine, Brooklyn, 1931; specialist certified by the American Board of Obstetrics and Gynecology; member of the New England Obstetrical and Gynecological Society; served during World War II; on the staffs of the Milford (Mass.) Hospital, Webster (Mass.) District Hospital, Fairlawn, Memorial, and St. Vincent hospitals; died May 8, aged 49, of coronary artery disease.

Knoff, Frederick Henry ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1905; an associate member of the American Medical Association; for many years on the faculty of his alma mater, and on the staff of the University Hospital; died in Cazenovia May 26, aged 77, of arteriosclerosis.

Kreutzer, Frederick Laurence, Vallejo, Calif.; University of California Medical School, San Francisco, 1944; specialist certified by the American Board of Surgery; served in the Medical Corps of the U. S. Naval Reserve; on the staff of the Kaiser Foundation Hospital; died June 19, aged 35, of injuries received in an automobile accident.

Leonard, Eileen Mary ⊕ San Francisco; Stanford University School of Medicine, San Francisco, 1922; member of the American Academy of General Practice; died May 29, aged 58, of cancer.

Lukens, Robert William ⊕ Wheeling, W. Va.; University of Pennsylvania School of Medicine, Philadelphia, 1925; fellow of the American College of Surgeons; interned at the Lankenau Hospital in Philadelphia; in 1950 president of the Ohio County Medical Society; served during World War II; on the staffs of the Wheeling Hospital and the Ohio Valley Hospital, where he died July 1, aged 54, of coronary thrombosis with infarction.

McMillin, Virgil Homer, Portland, Texas; Illinois Medical College, Chicago, 1907; died June 23, aged 84, of coronary thrombosis.

Marchand, Austin Flint ⊕ Haubstadt, Ind.; Indiana University School of Medicine, Indianapolis, 1924; president of the Gibson County Medical Society; served during World War I; died in the Welborn Memorial Baptist Hospital, Evansville, May 11, aged 59, of chronic hepatitis.

Neal, Charles Bodine ⊕ Millville, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1890; also a graduate in pharmacy; an associate member of the American Medical Association; died June 11, aged 88, of lymphosarcoma.

Presnell, J. Will, Scranton, Iowa; State University of Iowa College of Medicine, Iowa City, 1892; died May 11, aged 84.

Randel, Brown Wendel ⊕ El Paso, Texas; Chicago College of Medicine and Surgery, 1914; served during World War II; on the staffs of Hotel Dieu, Sisters' Hospital, and Southwestern General Hospital; died in Ruidosa, N. M., March 22, aged 62, of coronary thrombosis.

Read, Fred Karl ⊕ Akron, Ohio; Western Reserve University School of Medicine, Cleveland, 1916; member of the American Academy of General Practice; served during World War I; received a citation from President Roosevelt and a medal from Congress for his work as an examiner for Selective Service Boards during World War II; on the staffs of the Peoples and Children's hospitals; died in Mount Sinai Hospital in Cleveland June 22, aged 65, of an accidental fall from a roof.

Reiley, William Edgar ⊕ Clearfield, Pa.; Southern Homeopathic Medical College, Baltimore, 1907; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, Radiological Society of North America, and the American College of Radiology; on the staff of the Clearfield Hospital, where he died June 5, aged 72, of chronic congestive heart disease.

Rokala, Henry Emil ⊕ Virginia, Minn.; University of Minnesota Medical School, Minneapolis, 1937; interned at St. Luke's Hospital in Duluth; on the staff of the Virginia Municipal Hospital, where he died June 17, aged 52, of Hodgkin's disease.

Russell, W. A., Oak Ridge, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1891; died in Vicksburg, Miss., May 23, aged 88.

Scheetz, George Conrad ⊕ West Jefferson, Ohio; Starling-Ohio Medical College, Columbus, 1913; member of the American Academy of General Practice; died June 16, aged 78, of myocardial degeneration and arteriosclerosis.

Seelye, Ralph Holland ⊕ Hingham, Mass.; Harvard Medical School, Boston, 1890; fellow of the American College of Surgeons; member of the New England Surgical Society; formerly practiced in Springfield, where he was a trustee of the City Library Association, on the staff of the Springfield Hospital, and during World War II an examining physician at the Army Induction Center; died May 18, aged 90.

Small, Fitz Elmer ⊕ Biddeford, Maine; Medical School of Maine, Portland, 1899; died in the Deaconess Hospital, Boston, April 18, aged 78, of coronary disease.

South, F. Floyd ⊕ Portland, Ore.; University of Oregon Medical School, Portland, 1924; clinical instructor in general surgery at his alma mater; served during World Wars I and II; formerly member of the state board of health; county coroner; died June 4, aged 63, of coronary occlusion.

Theobald, John Joseph ⊕ Oak Park, Ill.; Rush Medical College, Chicago, 1920; specialist certified by the American Board of Otolaryngology; assistant professor of laryngology at the University of Illinois College of Medicine in Chicago; member of the American Academy of Ophthalmology and Oto-Laryngology; associated with the West Suburban Hospital, where he died July 5, aged 66, of pancreatitis.

Thornburg, William Vestal ⊕ Guthrie Center, Iowa; State University of Iowa College of Medicine, Iowa City, 1905; member of the American Academy of General Practice; died June 18, aged 75, of cerebral hemorrhage.

Tidd, Arthur C. Harmon, Youngstown, Ohio; Western Reserve University Medical Department, Cleveland, 1909; on the staff of St. Elizabeth Hospital, where he died June 24, aged 74, of intestinal obstruction and bleeding gastric ulcer.

Webster, John B. ⊕ New Bedford, Mass.; College of Physicians and Surgeons, Baltimore, 1914; fellow of the American College of Surgeons; served during World War I; received the Silver Star, and the Verdun medal was given to him by the French government; associated with Acushnet Hospital and St. Luke's Hospital, where he died July 1, aged 68, of coronary occlusion.

Wise, Samuel Howard ⊕ Portland, Ore.; Temple University School of Medicine, Philadelphia, 1920; died June 17, aged 62, of carcinoma of the lung.

CORRECTION

Armentrout, Charles Henry.—In the obituary of the late Dr. Charles Henry Armentrout (THE JOURNAL, July 23, page 1042), it was stated that Dr. Armentrout was a specialist certified by the American Board of Surgery, whereas he was certified by the American Board of Internal Medicine.

FOREIGN LETTERS

AUSTRALIA

Health Service in Australia.—The provision of a comprehensive national health service in Australia is made difficult by the division of the responsibility for health service between the states and the commonwealth (*Australasian Journal of Pharmacy*, April 30, 1955). Health is essentially a constitutional prerogative of the states, therefore all the basic facilities for health such as provision of hospitals, local health control, and sanitary control are state functions. The commonwealth government has, however, devised a comprehensive national health program that is working very successfully. The scheme aims to build up the morale and independence of the Australian people and ensure a vigorous and healthy population.

Governmental assistance in a planned program demands that any permanent scheme must contain certain elements to ensure an effective and economical service for the nation as a whole. Briefly these elements are: 1. The actual costs must be within the financial capacity of the individual and of the nation. 2. The government must have some control over these costs. 3. The plan must have the inherent means for automatic checks and control of costs. 4. Existing facilities, agencies, and proved methods should be used to the greatest practicable extent. 5. The plan must be on a permanent basis and must be organized to permit future development and extension of its machinery to handle any new problems that may arise. 6. The willing cooperation of physicians, pharmacists, hospital managements, and voluntary organizations should be secured by leaving to them as much of the administration and control of the scheme as possible to improve efficiency and minimize operating costs. 7. The individual must be encouraged to retain his sense of personal and social responsibility. 8. The effect of the scheme must be to raise the standard of medical care and treatment available to the community in general and to enable the individual to exercise freedom of choice when selecting the physician, pharmacist, or hospital that is to provide this care and treatment. This scheme aims first at preventing sickness; curtailing the length of sickness if it is not preventable; encouraging research into the causes of the sickness; eradicating sources of infection; and subsidizing hospital and medical insurance to assist individuals so that they may be able to pay their medical and hospital bills. This encourages earlier diagnosis and treatment. All of these assist hospital finances by lessening the number of patients going into hospitals and shortening the period of stay of those needing hospitalization.

Federal Activities.—Federal activities include: 1. The National Health and Medical Research Council, which deals with research. Grants for this purpose have been increased from $140,000 to $420,000 in the last four years. 2. A maternity bonus at the following rates: first child, $42; second and third child, $44.80; fourth and subsequent children $49. If insured at the lowest rates, the mother will also receive $35.28 toward hospital and $21 toward medical care. Child endowment is paid at the rate of 70 cents for the first child and $1.40 for the second and subsequent children to help maintain their nutrition. 3. The constitutions of children are built up by the provision of free milk to school children under 13 years of age throughout Australia, so that their resistance to disease is strengthened. 4. Very sick people are assured of being able to secure the antibiotics and costly drugs that have been discovered recently, by making them free on the prescription of a physician, as are practically all immunizing agents. 5. To ensure the health of the aged, the infirm, and the poor, a free Pensioner Medical Service has been developed to supply free medicines and medical treatment. 6. Tuberculosis has been attacked on a nation-wide scale by encouraging people who suspect themselves of being infected to report through the provision of the most generous tuberculosis allowances in the world, by free roentgenograms, and by the building of tuberculosis hospitals. Extraordinary results have been achieved, as shown by the fact that within the first four years the number of deaths attributable to tuberculosis was cut in half. Also the number of persons receiving allowances, a figure that rose sharply at the commencement of the scheme, is now decreasing as patients are responding to modern treatment and returning to useful occupations and full-time employment in the community. In 1930 tuberculosis accounted for 1,104 of each 10,000 deaths in Australia, but in 1953 the figure was 128. 7. The commonwealth subsidy to a system of voluntary insurance enables the community to meet the unpredictable costs of medical and hospital services.

Federal Government Given No Compulsory Powers.—The constitutional amendment quoted makes it clear that, no compulsory powers on health are given to the federal government. Everything must be done by voluntary cooperation. The commonwealth government has succeeded in establishing a partnership of all agencies dealing with health. The principle of the government's national scheme is to build up a partnership of mutual aid supported and stimulated by government aid. This partnership control permits legal powers to be delegated to professional and insurance organizations to enable them to police, discipline, and control abuse of the scheme. This system of control has proved so effective that the growth of the commonwealth health scheme has been phenomenal. In 1948-1949 total expenditure by the commonwealth and its associated health activities toward relieving sick people of medical and hospital costs was $18,200,000. In 1954-1955, judging from the first six months, the expenditure on these aids to the cost of individual sickness in the community will be $114,044,000, or over six times as much.

The government must be assured of the quality of the drugs for which it is paying large sums of public money and that the drugs provided are capable of achieving the purpose for which they are prescribed. After consultation with the states and the health organizations concerned, therefore, the commonwealth passed the Therapeutic Substance Act to ensure that drugs that are imported, subject to interstate trade, or supplied to the commonwealth or to persons under the National Health Act comply with specified requirements of packaging and labeling and maintain appropriate standards of purity.

Complimentary to this national program, the commonwealth is assisting, by way of money grants, a number of voluntary activities and organizations operating community health services, such as: (1) the Flying Doctor Service, which provides a wonderful service to those who live in isolated areas; (2) the Blood Transfusion Service, which is operated by the Australian Red Cross; (3) the Lady Gowrie Child Centers, which were established for the care of children of preschool age; and (4) the National Fitness Campaign, whereby funds are provided to the various states for the purpose of organization and to six universities to establish lectureships in physical education.

Under an agreement with the University of Sydney, the commonwealth has established a School of Public Health and Tropical Medicine at the University. In 1948 an Industrial Medicine Unit and an Institute of Child Health were established at the school. Fifteen health laboratories are maintained at strategic points throughout the commonwealth. Among other activities are the Commonwealth Serum Laboratories and the Commonwealth X-Ray and Radium Laboratory.

The items in these letters are contributed by regular correspondents in the various foreign countries.

AUSTRIA

Hemorrhage from the Tonsil.—At the meeting of the Society of Physicians of Vienna on April 22, Dr. J. Glaninger reported the case of a patient with a spontaneous oozing hemorrhage from the tonsil. Bleeding ceased after removal of the tonsil, which had been damaged by recurrent peritonsillar abscesses. The histological examination of the gland revealed numerous diapedetic hemorrhages. In all previously reported cases either superficial tonsillar vessels or, more often, vascular erosions were the cause of spontaneous hemorrhage in this region.

Electromyographic Findings in Poliomyelitis.—At the same meeting Dr. K. Pateisky said that the electromyogram reveals the functional organization and its disturbance in normal and in paralyzed muscles. The muscle that has been paralyzed by poliomyelitis shows a reduction in the number of action potentials, by destruction of the anterior horn cells; brief fibrillation potentials as a result of chronically denervated muscle fibers; and hypersynchronism and constant discharge frequency, because of functional weakness of the anterior horn cells. If activation is maintained, there is a decrease in amplitude of the action potentials because of fatigue at the motor end plate. With the aid of anticholinesterases, it is possible to counteract temporarily the electromyographic and clinical signs of fatigue and thus promote the regression of the paresis.

Connective Tissue.—At the same meeting Dr. A. Pischinger of Graz stated that the so-called soft connective tissues (the interstitial and reticular tissues) have important functions in the carbon dioxide, the ion, and the water exchanges and that they are concerned with the functions of enzymes and defense against infection. They contain two primary types of reticular cell, which, in response to certain stimuli, produce free differentiated forms: the macrophages or monocytes and the lymphocytes, with their special forms. The reticular cells of the interstitial cell system are so closely connected with the capillaries and the terminal neuroreticulum that all three must be regarded as a functional unit (interstitial apparatus). By virtue of this organization the interstitial cell system is interwoven into the general regulatory system and is correlated with the nervous and humoral regulatory poles. The close connection with the sympathetic nerves and with the blood exist also in the reticuloendothelial and the lymphatic systems. Here again, the interconnections with the regulatory poles can be demonstrated, but on the basis of simple experiments the reticuloendothelial system and the lymphatic tissues cannot be classed with the interstitial cell system but represent, by virtue of their emission of leukocytes, a third pole of regulation, which could be designated as the "cellular" pole. The functions of the epithelial cells of the parenchyma are influenced by the mesenchyma, that is, by the interstitial apparatus and beyond that by the regulatory poles. This concept of the connective tissue shows that it is a crucial system, which cannot be circumvented in any form of therapy.

Ectopic Teeth.—At the meeting of the Society of Physicians in Vienna on June 10, Dr. H. Baum reported on a woman, aged 40, who had suffered from increasing restriction of nasal breathing on the right side after an attack of influenza. Rhinolaryngological examination revealed what appeared to be a typical rhinolite on the right side of the nasal fossa and evidence of surgical repair of harelip and cleft palate. At operation two bicuspid teeth, the crowns of which projected into the nasal cavity and were covered with incrusted, brownish calcium salts, were removed. There had been a displacement of teeth into the nose with simultaneous rotation and the formation of rhinolites.

Colchicine and Colzemid Therapy in Leukemia.—At the same meeting Dr. Keibl reported on Colzemid (N-methyl-desatetylcolchicine), a derivative of colchicine. It proved highly effective in inducing a remission in patients with chronic granulocytic leukemia. The success of the treatment was shown by a reduction in the number of leukocytes, maturation of cells, diminution in the size of the enlarged spleen, and an improved general condition. While colchicine produces storing of thrombocytes that can be put to use therapeutically without being specific in leukemia, Colzemid, which is fully effective in granulocytic leukemia, does not exert any influence on the thrombopoiesis.

Prevention of Suicide.—At the same meeting Hoff and Ringl stated that, although there are situations in which it is understandable that man is compelled to commit suicide, the question arises of why larger numbers of persons have not committed suicide under extreme stress. The final decision apparently depends on the personality of the subject. Although perhaps in some cases the suicidal attempt differs from actual suicide, a tendency to self-destruction nevertheless is manifested in the attempt, although in an attenuated form, and this has to be taken seriously. In the speakers' series of 882 patients who had been admitted because of a suicidal attempt, a psychic or mental disturbance was the cause of the attempt in all cases. That does not mean that suicide is always a symptom of mental disease. Psychotic and nonpsychotic primary diseases must be differentiated. Involutional psychotic reaction (melancholia) and the dementias, particularly arteriosclerotic dementia, play the most important part among the psychoses. The nonpsychotic primary diseases are hysteria, neurotic reactions, psychopathy, and feeblemindedness. Patients with neurotic personalities who commit suicide are characterized by a typical development of personality that goes back to childhood, and immediately before the suicidal attempt this development of personality induces a "presuicidal syndrome" consisting of repression, inhibited aggression, and flight from reality. The decision to attempt suicide is influenced by an extreme tendency to punish onself, by reverted aggression, and by reports of other suicides. Furthermore, a suicidal attempt often represents an effective appeal to the environment. In recent years many patients with severe poisoning were referred directly to the psychiatric clinic while they were deeply unconscious. Thus the necessity arose to treat intoxications at the psychiatric clinic. The final task of the psychiatric clinic was the care, after discharge, for those whose lives had been saved. Many patients succeeded in adjusting their relationship with their fellow men after the suicidal attempt, and others built up new relationships. Nevertheless, sometime later, about 12% of such patients have a recurrence of their old behavior and again show suicidal tendencies. Thus, after-care is essential. It can be carried out most successfully in cooperation with the department of social welfare. The risk of repeated suicide depends also on the basic psychiatric diagnosis. It is not suggested that every person who has attempted suicide and whose life was saved should be admitted to the psychiatric clinic, but every person whose life was saved should be examined by a psychiatrist. Only in this way can the risk of recurrence, particularly in patients with involutional psychotic reactions, be prevented.

Toxemias of Pregnancy.—At the March 8 meeting of the Austrian Society for Gynecology and Obstetrics, Dr. H. Knaus reported the case of a 20-year-old woman whose first pregnancy had to be interrupted on account of severe hyperemesis. During the second pregnancy she again experienced it. Conservative therapy produced no improvement, but a blood transfusion produced the desired effect. A recurrence of the hyperemesis, several days after the patient was discharged from the hospital, responded again to a blood transfusion.

Dr. R. Schröder of Leipzig said that the most important toxemia of pregnancy is characterized by retention of water, proteinuria, and hypertension. He differentiates three forms of hypertension: true gestosis, hypertension that antedates the pregnancy, and fixed hypertension, with superimposed gestosis. Eclampsia occurs in 0.23% of all births; it is more frequent in urban than in rural regions, and it is seven to eight times more frequent in multiple than in single births. Toxicosis occurs in about 3% of pregnancies, and, in one-third of the patients, it is accompanied by convulsions. Blood replacement is more rapid during pregnancy. In the toxicoses erythrocyte volume is higher than normal, the albumin-globulin ratio is decreased, cystine is reduced, and methionine is increased. Furthermore, the blood sodium level decreases, but sodium becomes concentrated in the tissues favoring the development of edema. About one-third of the patients with gestosis do not show organic changes (functional toxicosis). Organic changes are indicated by the appearance of granular casts, and the renal tubules are damaged as is also the liver. Convulsions are elicited by the sudden onset of vascular spasm. The capacity to bind carbon dioxide is reduced; lactic acid increases in patients with toxicosis from 15 to 60 mg. per 100 cc. The metabolism becomes greatly taxed, but the details of this stress have not been completely explained. The blood iodine content increases from 8 to 24 mg. per 100 cc.; the thyrotropic hormone value reaches 40% at the end of pregnancy. The weight of the adrenal glands increases from 13 gm. in nonpregnant women to 18 gm. in the latter period of pregnancy, and the excretion of 17-ketosteroids is reduced in patients with toxicosis. The estrogenic hormone content decreases as the severity of the toxicosis increases. The placenta shows no changes that are typical for toxicosis.

Unilateral Hemorrhage of the Adrenals.—At the Feb. 16 meeting of the Austrian Urologic Society, Dr. Pecherstorfer presented the history of a 58-year-old man who at the time of hospitalization experienced blood pressure crises, with a systolic pressure far in excess of 200 mm. Hg. A thorough examination revealed anxiety, attacks of profuse sweating, and signs of collapse. Air-filling and retrograde pyelography of the right kidney revealed a moderate displacement and suggested the possibility of a space-limiting process above the right kidney. An exploratory operation revealed a moderately enlarged adrenal gland, with a bulbar enlargement in the center. The adrenal gland was removed, and a cavity the size of a cherry, which was filled with old blood coagula, was found. A diagnosis of pheochromocytoma was made. The macroscopic findings were corroborated by the histological examination. The patient was free from complaints after the operation, and several subsequent examinations disclosed nothing abnormal. The speaker emphasized the fact that in every patient with obscure hypertension, no matter whether the hypertension is intermittent or permanent, it is advisable to determine the catecholamine content of the urine. This is particularly important if hypertension develops in young persons.

DENMARK

Census of Mental Patients.—In March, 1952, the Danish government appointed a committee of experts to investigate the conditions likely to influence the evolution of mental hospitals in the future. It was suggested that a scrutiny of the sort of patients being treated in a typical mental hospital would give a clue to the likely composition of mental hospitals in the future. A member of this committee, Prof. E. Strömgren, has reported in *Ugeskrift for læger* for Feb. 24, 1955, on the 837 patients in one mental hospital. Dementia paralytica accounted for only 2.6% of these patients, senile and arteriosclerotic psychoses for 7%, epilepsy for 1.3%, schizophrenia for 52%, manic depressive psychoses for 18%, psychogenic psychoses for 6%, neuroses for 2%, and alcoholism for 1.3%. Strömgren concludes that the proportion with dementia paralytica, psychogenic psychoses, and alcoholism will in the future decline even further. Even with the potentialities of modern psychiatric treatment in mind, however, the forces tending to increase the demand for hospital beds will greatly exceed the forces tending to diminish this demand. The same committee has also scrutinized the occupants of the medical wards of two general hospitals to ascertain the amount and nature of the psychiatric problems to be found in such hospitals. Of the 264 consecutive admissions in each of these general hospitals who were examined by a psychiatrist, 5.3% were found to have psychoses, 25.4%, neuroses or psychopathy, and 2.5%, mental deficiency. About one-quarter of all these patients needed special psychiatric care. Another investigation by the same committee was undertaken with 21 medical practices and a total of about 17,000 doctor-patient contacts. Psychiatric problems were involved in 22% of those contacts, which probably occupied between 30 and 50% of the working hours of the practitioners.

Congenital Heart Disease.—In the last 10 years a large portion of all patients with congenital heart disease in Denmark has passed through the cardiological laboratory of medical department B of the Rigshospital in Copenhagen. In a preliminary communication on the subject in *Ugeskrift for læger* for March 3, 1955, Prof. Erik Warburg has reviewed his findings concerning 1,000 patients examined for congenital heart disease in this laboratory between the end of 1946 and Sept. 2, 1954. Nearly 100 of these patients had systolic murmurs of doubtful origin. They were sent to the laboratory for observation for congenital heart disease and often presented no other tangible evidence of it. In 875 patients catheterization of the heart was undertaken, an examination that could be dispensed with when such conditions as persistent ductus arteriosus and coarctation of aorta could easily be diagnosed by other means. Catheterization of the heart caused no death nor permanent disability, but 56 patients responded to this test with a temperature over 100.4 F. As many as 379 patients were more than 15 years old when examined, and 38 were over 40. Persistent ductus arteriosus and septal defects of the auricle were much more common in women than in men, whereas coarctation of aorta was more common in men. Warburg compared his 1,000 clinical cases with Maud Abbott's 1,000 postmortem cases. Warburg found transposition of the truncus arteriosus in only 2 patients, whereas Maud Abbott found 69 such cases; Warburg's 94 patients with systolic murmur of doubtful origin had no counterpart in the postmortem material; and Warburg's patients with persistent ductus arteriosus outnumbered Maud Abbott's in the ratio of 222 to 105. The figures for Eisenmenger's syndrome showed greater conformity, with 43 such cases in Warburg's material and 37 in Maud Abbott's.

Treatment of the Rheumatic Diseases.—Several recent articles in the Danish medical press have emphasized the tantalizing character of phenylbutazone, which is at the same time remarkably effective and very dangerous. The latest article on this subject by Tophöj and his co-workers (*Ugeskrift for læger*, March 31, 1955) reports their experiences with 78 patients given phenylbutazone according to the following dosage: on the first day 800 mg. and on the following days 200 mg. daily (in a few patients 200 mg. on alternate days). With a daily maintenance dose of 200 mg., a constant blood concentration of 5 mg. pe
100 ml. was established. The drug was discontinued when i
effected no improvement in the course of a week. Of the 2
patients with arthritis deformans (including 12 of pure hi
arthrosis), 7 showed no response after a week. The remainin
19 responded well while in hospital, and among them wer
several who continued treatment after discharge. The best re
sults were obtained in seven patients with gout. On the othe
hand, only 6 of 29 patients with rheumatoid arthritis wer
benefited by this treatment. Of the 12 patients suffering fro
side-effects, 7 had to discontinue the treatment on this accoun
The drug should therefore be reserved for certain patients wi
severe disease proving refractory to other methods. The patie
must be informed of the risks in order to gain his cooperati
in making blood tests. The authors hope that the small dos
given in this series have appreciably reduced the risk of sid
reactions without a corresponding reduction of the therapeu
effect of the drug.

ENGLAND

Congress of Ophthalmologic Society.—At the annual meeti
of the British Ophthalmological Society in April, Mr. G. Morg
stressed the permanent visual disability caused by thrombosis
the retinal vein. In other parts of the body the principal fac
leading to thrombosis is slowing of the blood stream, but in
eye the veins are affected more as a result of involvement of
adventitia than as a result of stagnation. Vasodilators that w
formerly used in treatment have been replaced by anticoagula
which are also used prophylactically. To be of value a
coagulants should be given when a retinal vein is found to
dilated, when extravasation of blood is minimal, and while vis
acuity is still good.

Mr. H. B. Stallard said that air had been injected intraocul
for the treatment of tuberculous iritis and diagnosticaly in
location of intraocular foreign bodies and intraorbital neoplas
After cataract extraction air is injected into the anterior cham
to re-form this and to keep the iris and vitreous face away f
the wound. After cyclodialysis for glaucoma, air controls h
orrhage, reforms the anterior chamber, and keeps the fistul
tract open; after operation for retinal detachment, air in
vitreous humor restores the normal anatomic position of

tina and keeps the bed of the transplant away from the iris d lens in keratoplasty. Air, being compressible, produces a ring-like pressure. Its position in the eye is controlled by sture, and it is absorbed within four to eight days. It may use air embolism and glaucoma, but these risks are negligible. erile air may be injected from a syringe autoclaved with the unger withdrawn.

Mr. Anthony Palin and Dr. R. C. Tudway said that it was often fficult to tell the difference clinically between malignant and nmalignant intraocular growths but that actively growing mor tissue takes up radioactive isotopes such as P^{32} more adily than normal tissue does. They have used this isotope r the diagnosis of malignant intraocular neoplasms. Patients e given a compound containing the equivalent of 1 mc. of the tope in water, and, 24 hours later, Geiger counter readings taken in the various meridians of the affected eye and conls are taken from the symmetrical meridians in the other eye. e error is 15%. The significant difference between the two es is 40% or more. The results do not depend on pigmentation the tumor but on hyperactive cell metabolism. In the acute ge uveitis may give a misleading result. The method as used present is of no diagnostic value in the gliomas of children.

dioactive Isotopes.—At the symposium on radioactive iso- pes in April, Dr. E. Pochin of University College Hospital, ndon, said that the surface of the body could be irradiated by al application of a beta ray emitter, such as radioactive phosrus (P^{32}), which is used for the treatment of superficial skin ions. A solution of a radioactive substance may also be inted directly into the lumen of a hollow viscus or introduced o a rubber bag. Both these methods have been used for irdiating superficial bladder tumors. Another way is to inject colloidal suspension of the isotope into a solid tissue, the lloidal state limiting its absorption. Colloidal gold (Au^{198}) s been used in this manner to irradiate a number of solid mors, and it is used to treat effusions due to malignant growths. jected into the peritoneal cavity, it is deposited on the perineum and can irradiate malignant metastases with beta radians. As these are of low penetrating power, the treatment is ly effective against small secondary deposits. When colloidal dioactive material is injected intravenously, it accumulates in reticuloendothelial system and irradiates those organs conining a high proportion of reticuloendothelial cells. This thod has been used in the treatment of the reticuloses and imary tumors of the liver. Larger particles of 30 to 50 μ hen injected intravenously are held up in the lung capillaries, ere they may irradiate tissue selectively. By use of a cardiac theter, the distribution of the radioisotope can be limited to e lung only. Carbon coated with Au^{198} has been used for is purpose, but there is danger of other organs being subcted to gamma radiation from the gold.

Dr. Pochin discussed the use of radioactive isotopes by what called "metabolic localization." Radioactive elements may be ven in a form in which they can be retained selectively by rtain tissues without undue irradiation of the rest of the dy. The best examples of this are the use of radioactive iodine ^{131}) in the treatment of diseases of the thyroid and P^{32}, in e treatment of polycythemia vera. The thyroid concentrates dine to such an extent that I^{131} can be localized in the gland, hich may then be subjected to several hundred times more irraation than the other tissues of the body. Irradiation of the thyid is a useful alternative to operation or the antithyroid drugs r the treatment of hyperthyroidism and toxic nodular goiter, d it is far simpler for the patient. There is, however, a remote nger that carcinoma may subsequently arise in an area of thyid that has been irradiated but not destroyed, and, although no se has yet occurred in a five year study at University College ospital, it is advisable to limit this kind of treatment for nonalignant thyroid disease to patients past middle age. In malignant disease of the thyroid, irradiation is the treatment of choice there are metastases that can concentrate iodine.

Prof. D. W. Smithers of the Royal Marsden (Cancer) Hospital, ondon, said that the use of colloidal gold in effusions due to coplasms is still experimental and that several years must lapse before it will be possible to pick out the best type of case or treatment. The infiltration of tumors with radioactive material is not without risk, owing to the increase in pressure and the danger of disseminating malignant cells. The use of some radioisotopes has advantages over other methods; for example, tantalum-182 is superior to radon seeds in the treatment of superficial tumors of the bladder, and Au^{198} grains may supersede radon seeds for the treatment of certain tumors. Mr. N. Veall of Guy's Hospital said that diagnostic tests can now be done in smaller hospitals, as the capital expenditure on equipment for the established procedures is no longer very costly. In some of the larger hospitals hundreds of radioiodine tests of thyroid function are made annually.

Health in Northern Ireland.—In June, 1954, the Minister of Health and Local Government in Northern Ireland appointed a committee to inquire into the health services in the country. Its report (Report of the Committee on the Health Services in Northern Ireland, Cmd. 334, London, England, Her Majesty's Stationery Office, H. M. S. O. 1955) states that the principal body in Northern Ireland is the Hospitals Authority, which provides hospital and specialist services throughout the area and whose members are appointed by the Minister. One-third are general practitioners, and one-fourth are appointed in consultation with management committees. The other principal body is the General Health Services Board, which arranges for the provision of general medical and other services and controls medical practice. The system has worked well. The number of hospital beds since the scheme was introduced has increased by 10%, admissions have increased by 40%, laboratories have been built or enlarged, and radiological departments have been provided. Outpatient attendances have increased by 77%. Progress in medical treatment in Northern Ireland during the last few years compares favorably with that in any area of the United Kingdom. Certain improvements such as the bringing of the Hospitals Authority and the General Health Services Board under the authority of the Ministry of Health and Local Government are recommended. It is also suggested that the number of members of the Hospitals Authority be reduced from 27 to 20 and that 5 should be physicians. At present 36 hospital management committees control 67 hospitals. The number of committees could well be reduced. A more equitable distribution of hospital endowments is suggested, at present some hospitals being more heavily endowed than others.

The committee recommends that contracts held by consultants and specialists should be reviewed at regular intervals. Facilities should be afforded to consultants and specialists to keep abreast of the latest developments in medicine by attending teaching hospitals. Part-time appointments of general practitioners to hospitals should be encouraged and opportunities given to hospital physicians to engage in part-time general practice. A young physician should not be forced to choose between a career in hospital or in general practice. The committee has examined the method of payment of general practitioners, but it does not consider that any departure from the present method of paying by capitation fee would present any advantage. The provision of health centers and group practice should be encouraged. The cost of prescriptions is higher than the average for England or Scotland. Figures for individual, area, and provincial costs are to be issued quarterly to practitioners, and it is hoped that this will encourage their cooperation in keeping down costs. Consultants are often to blame for expensive and lavish prescriptions. Physicians have also been accused of lax certification, but, when interviewed by the Ministry, they state that if their standards were more exacting they would lose many of their patients. The committee is perturbed about this and considers that disciplinary measures should be taken in bad cases. It suggests that the British Medical Association should cooperate, with a view to raising the standard of certification.

New Treatment for Barbiturate Poisoning.—Dr. A. Shulman and his co-workers have devised a new method of treating barbiturate intoxication (*Brit. M. J.* 1:1239, 1955). A laryngoscope is first used to assess the pharyngeal and laryngeal reflexes, and, if these are absent, a cuffed tube is inserted and the stomach contents carefully aspirated. Antibiotics are given to prevent the possibility of pneumonia, and a clear airway and adequate oxygenation are insured. Then, two specific barbiturate antagonists are administered. These are ββ-methylethylglutarimide (NP 13) and 2:4-diamino-5-phenylthiazole hydrobromide (DAPT). The former is a more potent agent and shows some chemical resemblance to the barbituric acid ring system, so that it probably acts by competition at the surface of the cell receptors, displacing the barbiturate. DAPT is itself a weak antagonist, but it is claimed to be a good synergist with NP13 and a good respiratory stimulant. Both substances produce a rise in blood pressure and sweating. These drugs are injected by means of two separate syringes into the rubber tubing of an intravenous 5% dextrose drip. Every three minutes, 1 ml. of 1.5% DAPT is injected, followed immediately by 10 ml. of 0.5% NP13. The response of the patient is assessed by noting pulse, respiration, blood pressure, muscle tone, reflexes, laryngeal and pharyngeal reflexes, eye signs, presence of voluntary movement, peripheral circulation, and color and temperature of the skin. The injections are continued until the patient is brought to the "safe state" denoted by a return of muscle tone and reflexes and a return toward normal of pulse rate, respiratory rate, and blood pressure. The treatment generally takes about two hours in a deeply comatose patient. A total dose of 1 gm. of NP13 and 0.3 gm. of DAPT is adequate in most cases of barbiturate poisoning. Once the safe state has been reached, the airway is removed and the patient treated as if recovering from light anesthesia. Spontaneous recovery occurs normally within eight hours. If the patient regresses, more drugs are administered. This method of treatment has the advantages of obviating the need for prolonged endotracheal intubation; minimizing the immediate risk to life and the remote risk associated with possible complications of prolonged barbiturate coma; and reducing to a minimum the nursing of the patient. Forty-one patients with barbiturate poisoning, nine of whom were seriously ill and might have died without treatment, were treated by this method, and only one died.

Cot Standards.—In 1950 and 1951 the British Standards Institution laid down standards for hospital and domestic cots. ne of the specifications dealt with the space between cot bars. n order to make it impossible for a child's head to pass through the bars, it was specified that the space between bars should be 3 to 3.5 in. in hospital cots and not more than 3.7 in. in domestic wooden cots. The difference between the two specifications is due to the fact that metal bars have some degree of flexibility. Since the issuing of these specifications, three fatal accidents and one near fatal one have occurred; in all of these the children had slipped through the cot bars feet first and, as the bars were too close to allow the passage of the child's head, the weight of the body pressed the face into the bedding and caused asphyxiation. Even though these accidents did not occur in cots conforming with the current standards, the Ministry of Health and the Home Office (*Month. Bull. Min. Health* **14**:72, 1955), decided to review the matter, as it looked as if the standard designed to eliminate one type of accident permitted another. The anteroposterior chest and pelvic measurements and head measurements of 1,600 children, aged 6 months to 3 years, were therefore obtained. These showed that cots with bar spacing of 3.5 in. would permit a large proportion of 18-month-old children to pass their hips between the bars, and even 9% of 3-year-old children would pass through. After the hips have passed between the bars the next obstacle would be the chest depth, which would prevent all but about 1% of 12-month-old babies, or 5% of 6-month-old babies, from being able to squeeze through the bars sufficiently far enough for the body to hang by the head. On the basis of these new data the British Standards Institution issued a new standard for children's hospital cots; that is, that the bar spacing should be 2.7 in. to 3 in. with an upward tolerance of 0.06 in. The institution, however, has refused to modify the specification for wooden cots. Therefore, the Ministry of Health and the Home Office have decided that they cannot continue to support the present standard in view of their knowledge that fatal accidents could in certain circumstances occur in cots conforming to it. The British Standards Institution has accordingly been asked to indicate that the support of these departments has been withdrawn.

Human Centrifuge for Aviation Medicine Research.—A new man-carrying centrifuge has been installed at the Royal Air Force Institute of Aviation Medicine at Farnborough. The maximum speed of rotation—54.4 rpm, when the two observation cars (or gondolas) are traveling at 115 miles per hour—can be attained in nine seconds from rest. The radial acceleration is then 30 g. An acceleration of 5 g can be reached in 1.5 seconds. These high speeds will be used only for testing structures. It is not proposed to subject men to greater acceleration than 10 or possibly 15 g in the prone or supine positions. All recording is done electrically, and it is this part of the apparatus that is so unusual. The signals are carried in leads along the arm of the centrifuge into the central pillar. They are then led to the floor above by a system of slip rings in a column above the centrifuge chamber. To include the telecommunication circuits, there are 60 silver slip rings, each with two silver-carbon brushes leading to 30 mercury troughs, and each with a spade-type collector. The slip ring system is so efficient that electroencephalograms and electrocardiograms that involve a maximum strength of only 1 mv. can be recorded without distortion even though they have to be led 50 to 60 ft. before being recorded. In the recording room there is a 12-channel inkwriter, which will be replaced shortly by a 24-channel photographic recorder. There is also a cinecamera in the gondola to photograph the experimental subjects' reactions. It is planned to include cineradiographic recordings of the heart and lungs.

Charges Against Research Council Denied.—In the House of Commons a Member of Parliament asked the Minister of Works whether he was aware that a number of cases of cat stealing on a large scale had recently been brought to the courts and that several people had been convicted for this offense; that these cats had been stolen for sale to medical research laboratories; and that the cost of the defense and the fines had in some cases been paid by the Medical Research Council. The Member of Parliament asked what authority existed for the payment of such expenses out of public funds; how much had been spent on these cases in the last six months; and what action the Minister of Works proposed to take to prevent the recurrence of such incidents. The minister stated that there was no truth in the allegations against the Medical Research Council, despite the testimony of some witnesses.

Celebrations at Royal College of Surgeons.—The Royal College of Surgeons at Edinburgh celebrated the 450th anniversary of its foundation in June. The first "Seal of Cause" of the incorporation of surgeons and barbers of Edinburgh was granted by the town council of Edinburgh, and was ratified by James IV of Scotland. A recently discovered portrait of James IV was on view for the first time during the celebrations. The annual banquet was attended by the Duke of Edinburgh, who was admitted to the honorary fellowship. The Duke of Edinburgh humorously said that, although James IV practiced surgery on members of his household, he had no intention of doing so. The president presented the Duke with a silver replica of a surgeon's bleeding cup.

Lack of Facilities for Treating Alcoholism.—Dr. Pullar-Strecker, the secretary of the Society for the Study of Addiction, deplores the lack of facilities for treating the alcoholic (*Lancet* **1**:1072, 1955). In greater London there are 254 hospitals with about 2,325 outpatient clinics specializing in almost every conceivable ailment. Each year every physician is sent a timetable, complete with map, setting out in detail the specialty, location, address, and hours of attendance of all the clinics; yet not one, serving a population of 8 million, caters to the alcoholic or his relatives. Dr. Pullar-Strecker estimates that 500,000 persons suffer, directly or indirectly, from the repercussions of alcoholism in Britain.

New Organism Resembling Salmonella Schottmülleri.—Since December, 1951, a number of strains of Salmonella similar to S. schottmülleri have reached the *Salmonella* and Central Enteric Reference Laboratories from apparently sporadic cases in widely separated parts of the country. The strains were alike in a number of unusual features: they failed to ferment dulcitol, they were antigenically not typical of S. schottmülleri, and they could not be phage-typed. The associated illnesses resembled food poisoning rather than paratyphoid. The organism had been isolated from 99 persons: 43 had symptoms and 56 were symptomless excreters. The cases occurred in three waves: December, 1951, to February, 1952; March to July, 1953; and March to June, 1954—an unusual seasonal distribution for Salmonella infections in the British Isles. In all three epidemics the patients were widely scattered geographically. An analysis of the clinical features in the 43 patients with symptoms showed that 42 had diarrhea; 5 with blood in the stools and 9 with abdominal pain; 20 had vomiting, and a greater number complained of nausea; and 20 had fever. Other symptoms less often observed were joint pains, headache, and general weakness. Neither splenomegaly nor skin rash was observed. The typical illness was characterized by mild to moderate diarrhea. The onset was usually sudden. The duration of the acute illness was two to four days, but some patients had diarrhea for several weeks. Although no definite evidence was obtained on the incubation period, it is considered to be one to three days rather than the longer period usually associated with paratyphoid. The source of infection was not discovered, although it was assumed that most patients were infected by some article of food. The wide scatter of cases could only be explained by some nationally distributed food, but there was evidence that some cases had a more local origin.

PERU

Reserpine in Hyperkinetic Syndromes.—The use of reserpine in neuropsychiatry is increasing. Dr. J. O. Trelles and his coworkers have used a purified extract of reserpine in the treatment of complex hyperkinetic syndromes and have reported their findings at the meeting of the Peruvian Society of Neuropsychiatry and Legal Medicine in Lima in June. The therapeutic trial was carried out in 16 patients, of whom 7 had choreoathetosic movements; 4 had paralysis agitans; 2 had chorea (ordinary and hereditary chronic progressive with mental deterioration); 2 had infantile encephalopathy (one with hemiballic movements and one with pure athetosic movements of the hand); and one had a cephalic tremor. The age of the patients ranged from 9 months to 59 years. In the acquired cases the duration of the disease was two months to 12 years, and in the congenital it was 5 to 59 years. The drug was given in massive doses of 6 mg. daily or in doses starting with 0.25 mg. daily and increasing according to the patient's tolerance. In general the authors preferred to administer the drug at doses slightly lower than those currently used by other investigators.

Reserpine proved to be a valuable drug in the treatment of the hyperkinetic syndromes. It gives better results than those obtained by any other procedure so far available in the symptomatic treatment of patients suffering from choreal and choreoathetosic movements. All the patients, except those with paralysis agitans, showed a marked diminution of their extrapyramidal movements, but the relief of the dyskinesis was transient, lasting only as long as the drug was given. The younger the patient, the better were the results obtained. In patients whose disease was of short duration, a fair temporary remission of the hyperkinetic manifestations was obtained with relatively small doses of the drug, but in chronic or congenital cases larger doses given over a prolonged period were needed to achieve the same results. On the average, favorable responses were obtained with doses ranging from 3 to 4 mg. daily. The clinical response to the drug occurred after a latent period, which was never less than 4 or more than 15 days. This period does not depend on the mode of administration of the drug, but it seems to be related to the elapsed time between the onset of the neurological disease and the appearance of the dyskinetic syndrome (the longer the latter, the longer is the latent period). Side-effects varied from patient to patient and consisted of headache, dizziness, vomiting, insomnia, and/or irritability when the drug was given parenterally, regardless of the amount of the dose and whether the intravenous route was used. Such untoward effects were observed only with large doses when the oral route was used. These side-reactions usually disappeared either spontaneously or when the dose was reduced. Apart from the inhibitory effects shown by the drug on the extrapyramidal movements, it seems to produce a general subjective amelioration in the patient, probably through its sedative action.

Bartonellosis.—Infection with Bartonella bacilliformis is usually acute and is associated with a poor prognosis. In the endemic regions, however, the natives may suffer from a benign form characterized by a warty eruption (verruga peruana), which appeared to confer a lasting immunity to all forms of the disease. In those who contracted the acute form and died, intercurrent infections rather than the bartonellosis were the cause of death. In *Revista médica peruana* (vol. 25, no. 303, March, 1954) Dr. Héctor Colichón reported his demonstration through serologic methods that the mobile organisms found in patients with bartonellosis who died were generally Salmonella typhimurium organisms. Besides, he found that many patients with bartonellosis complicated with intercurrent infection who survived showed detectable serologic signs of Salmonella infection. The question then arose: at what stage of the bartonellosis does the secondary infection occur. Most observers agreed that it took place in the remission (bartonellosis usually shows a hematic or acute phase, a remission, and an eruptive phase characterized by verruga peruana). Dr. Aldana of the Dos de Mayo Hospital, however, believes that intercurrent infection generally arises during the acute phase of the disease.

Recently Dr. M. Cuadra, of the same hospital, reported in *Revista médica peruana* (vol. 25, no. 307, July, 1954) that salmonellosis may arise in the acute phase, early in the remission, or after 15 or more days have elapsed from the end of the acute phase. Secondary infection early in the remission is by far the most frequent. Dr. Cuadra states also that it is possible, on the basis of laboratory findings, to diagnose with certainty what type of complication is developing. In the early type, fairly large quantities of B. bacilliformis are found in the peripheral blood; blood cultures for Salmonella organisms are positive; and there are signs of severe anemia without evidence of hematic regeneration occurring early in the remission. In the type occurring early in the remission the anemia is severe, but signs of hematic regeneration are present; B. bacilliformis is rare in the peripheral blood; and Salmonella organisms are present. In the late type, no B. bacilliformis is found; Salmonella organisms are present; and the anemia is mild or slight with signs of hematic regeneration. In the patient who survives, Salmonella organisms can only be detected indirectly by means of blood cultures and serologic methods. Salmonellosis superimposed on bartonellosis always represents a serious complication, the mortality rate for which is 90 to 100%. Its main clinical features are sudden onset with chills, fever, sweats, and severe digestive disturbances. The patient appears toxic and usually dies in coma within a few days. Often there is hepatic involvement, which adopts the clinical pattern of a Salmonella hepatitis and shows a high direct bilirubin level. When this complication arises early, its clinical findings are superimposed on that of the bartonellosis, and the diagnosis is much more difficult.

A previously existing severe anemia is necessary for intercurrent infection to develop, and the more severe the anemia, the worse the prognosis. The percentage of patients with bartonellosis in whom the complication of salmonellosis develops is about 40. Bartonellosis appears to invalidate the immunity to salmonellosis that the patient has developed over the years. Other complications, such as tuberculosis, malaria, dysentery, pneumonia, and viral diseases are rare. The broad-spectrum antibiotics, especially chloramphenicol, have greatly improved the prognosis for patients whose bartonellosis is complicated by salmonellosis. Patients with bartonellosis should be given chloramphenicol as early as possible. In Dr. Cuadra's series of 13 patients, the 8 who received the drug early were saved and the others died. Such antibiotics as penicillin, streptomycin, chlortetracycline, oxytetracycline, tetracycline (Achromycin), and erythromycin have proved to be useless in the control of salmonellosis, although they do check the bartonellosis. Because the salmonellosis is the killer, treatment should be directed against it and not against the bartonellosis.

CORRESPONDENCE

TREATMENT FOR HYPERTENSION

To the Editor:—In his recent article on the treatment of hypertension (*J. A. M. A.* 158:359-367 [June 4] 1955) Dr. Grimson has taken issue with me on two points: (1) the use of neostigmine to overcome constipation produced by the ganglion-blocking agent, and (2) administration of the morning dose of the orally given blocking agent after, not before, breakfast. I have advocated 15 to 30 mg. of neostigmine taken orally on an empty stomach as being generally the most effective method for overcoming the constipating effects of the ganglion-blocking agents, particularly pentolinium. Dr. Grimson, however, has found in anesthetized dogs, rendered hypotensive with pentolinium, that the intravenous injection of neostigmine will result in a rise of blood pressure back to or toward control levels. On the basis of these studies Dr. Grimson concludes that we are producing the same effect in patients. During the past three years we have treated over 100 hypertensive patients with pentolinium using neostigmine orally in the manner already indicated. In the majority of these patients blood pressures were recorded in the hospital during the period of regulation before and two hours after neostigmine. In no case have we observed an escape of blood pressure that could be attributed to the action of neostigmine. In addition, somewhat over 50 patients who have been taking the two agents for one year or longer record their blood pressures at home. They take neostigmine on arising in the morning. After they have dressed and had breakfast they record their blood pressure. Thus, the blood pressure is being recorded one or two hours after administration of the drug. Rather than being higher these pressures usually are the lowest of the day. In some instances I have asked the patients to check their blood pressure immediately following the bowel movement, usually occurring approximately an hour after neostigmine is taken, that is, at the time of maximum action of the neostigmine. A sudden upsurge of blood pressure never has been noted at this time. The pressures recorded at these times in the morning almost always have been as low as any recorded during the day.

A sizeable collection of data, therefore, lends no support to Dr. Grimson's contention that by giving neostigmine to our patients we are reversing the hypotensive effects of the ganglion-blocking agent. Neostigmine has parasympathomimetic (muscarinic) and ganglion-stimulating or ganglion-depressing (nicotinic) effects. Dr. Grimson apparently has observed the nicotinic effects of the drug in anesthetized dogs while we have observed only the muscarinic and never the nicotinic effects in patients. It should be pointed out that the species are different, the routes of administration different, the blood concentrations probably different, and the experimental condition (anesthetized versus nonanesthetized) different. It is not surprising, therefore, that the results are different. These considerations are more than academic. Our patients would complain loudly if neostigmine was taken away from them. Any measure that eases the unpleasant side-effects of the ganglion-blocking agents is too valuable to be discarded because of some animal experiments that may not be pertinent to the issue at hand.

Dr. Grimson's second criticism is directed toward my recommendation that the morning dose of pentolinium be taken after, rather than before, breakfast. He states that the pharmaceutical concern that manufactures pentolinium quotes me to this effect. This is true. He further states that in the original communication of our group concerning pentolinium we advised that the dose be given before breakfast. This, also, is true. However, we since have changed our opinion. Dr. Grimson believes that pentolinium exerts a greater hypertensive effect if it is given before meals. I agree with this completely. What then is the reason for my seemingly inconsistent recommendations? It was several of our more observant patients who taught us to give the first dose after, rather than before, breakfast. By recording their blood pressures at home they noticed that their sensitivity to the hypotensive effects of pentolinium was greatest on arising in the morning and decreased progressively during the remainder of the day. Postural hypotension usually was present on arising, before the morning dose was taken, due to residual pentolinium taken the previous night. Since we utilized an eight-hour dosage interval it was necessary for us to administer a dose in the morning sufficiently large to maintain a reduction of blood pressure until 2 or 3 p. m. However, when a dose this large was taken before breakfast, absorption was accelerated and excessive hypotension occurred one or two hours later due to the increased susceptibility of the patient to postural hypotension during the morning hours. As a result, the patients who were attempting to earn a living encountered syncopal episodes on the way to or at work, or if not, experienced unpleasant faintness and difficulty in mental concentration. Nevertheless, by 2 p. m. they again were quite hypertensive.

Some of these patients solved this problem by taking th morning dose on a full, rather than an empty, stomach. As th early morning hypotension disappeared the pentolinium bega to exert its effects more gradually and a more even reductio of blood pressure from early morning to 2 p. m. resulted. Th diurnal fluctuation of responsiveness or sensitivity to pentoliniu or other ganglion-blocking agents is a vital consideration i dosage adjustment. Its importance is not appreciated unles blood pressures are recorded at home. In order to obtain a fairl even reduction of blood pressure, the afternoon dose frequentl must be larger than the morning dose, in some instances as muc as four times the morning dose.

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COBALT AND THYROID DYSFUNCTION

To the Editor:—An article by J. P. Kriss and co-workers (T JOURNAL, Jan. 8, 1955, page 117) stated that myxedema a goiter may result from cobaltous chloride medication. We cently obtained data that further indicate that cobalt medicati may result in thyroid dysfunction. A 19-year-old man with sick cell anemia was given 100 mg. of analyzed cobaltous chlori in an aqueous solution three times a day for 44 days. The pr tein bound iodine and cholesterol concentrations of plasma d not change significantly, nor was a change in the size of t thyroid gland noted. However, a radioiodine uptake before cob treatment was 40%; after 23 days it dropped to 6.4%, and the 39th day it was 3.2%. Seven days and 30 days after thera with cobalt was discontinued the radioiodine uptake was 27 and 43% respectively.

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RUPTURE OF AORTIC ANEURYSM INTO ESOPHAG

To the Editor:—In the Correspondence section of THE JOURN June 18, 1955, page 587, Dr. John T. Pewters describes a c of aortic aneurysm with rupture into the esophagus and ref to a letter in THE JOURNAL, Dec. 26, 1953, page 1571, by D Samuel Baer, who questioned the rarity of this occurrence stated by Calenda and Uricchio: "In the past 27 years on five such cases have been described in the world literatur (*J. A. M. A.* **153**:548 [Oct. 10] 1953). I also published such case recently (Krudy, A. G., and Smith, J. A.: Multiple Saccul Aneurysms of the Thoracic Aorta with Spontaneous Ruptu Into the Esophagus: Report of a Case, *Dis. Chest* **27**:690, 19 and reviewing some earlier studies on large series of aor aneurysms found that rupture into the esophagus was not ra Of 233 cases of aneurysm of the thoracic aorta report by Lucke and Rea (*J. A. M. A.* **81**:1167 [Oct. 6] 192 5 perforated into the esophagus. Of 4,000 aneurysms of t thoracic aorta reviewed by Boyd (*Am. J. M. Sc.* **168**:625, 192 112 ruptured into the esophagus, and of 633 cases of saccul aneurysms of the thoracic aorta reported by Kampmeier (*An Int. Med.* **12**:624, *1938*) the most frequent site of rupture w the esophagus with 20 cases (one ruptured into the esophagus and also into the left pleural cavity). Another case of aortic aneurysm rupturing into the esophagus and into the left pleural cavity was recently reported from the University of Illinois in Diagnostic Problems in THE JOURNAL, page 479, June 11, 1955. The incidence of syphilitic aneurysm and so its rupture into the esophagus might be decreasing because of the more efficient treatment of the early syphilis; however, as the recently published four cases demonstrated, it is still far from being a medical rarity.

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PUBLIC RELATIONS

What Is Ahead

Like American industries and businesses, the medical profession in recent years has become aware of the importance of good public relations. How to create and maintain good public relations in medical practice will be the subject of this page, which will appear on a monthly basis. Discussions of the philosophy upon which good public relations is founded will be coupled with actual suggestions from physicians for improving individual relationships between doctors and the public. Subject material will include the public relations aspects of all phases of medical practice as well as some medical society public relations activities requiring cooperation of individual physicians.

Public Relations—Is Everybody an Expert?

Everybody talks about public relations today, but few can define the term specifically. Sometimes it is easier to begin explaining public relations by stating that it is not press agentry and publicity. A California public relations consultant says: "It is not a cover-up for shortcomings; it is not a propaganda campaign to disguise the facts; it is not a cure-all; it is not merely the creation of favorable press comments." Public relations is a way of thinking translated into action. It is not some vague entity, but an actual philosophy that can be applied to medical practice combining public service with efforts to win good will.

What some people fail to realize is that everybody has public relations—it is not a many-colored coat that can be donned at will. The important question is this: do you have good or bad public relations? Dr. Sidney Pratt, past-president of the Montana Medical Association, has pointed out that "public relations covers a wide range of individual and group contacts: Doctor-patient relations; doctor-doctor relations; doctor-hospital relations, other inter-professional relations" and so forth. Where there are people attitudes exist. The sum of the attitudes people harbor about a service, a product, or an individual add up to the kind of public relations that individual or commodity has.

"In an earlier day, every doctor was his own public relations expert, and his failure in the field of public relations injured himself but had little effect upon the profession as a whole," wrote Dr. J. Decherd Guess in the *Journal of the South Carolina Medical Association.* "Such is not the case in these modern times of easy communication and fast travel. One man's failure, or the failure of a small group, is widely publicized and hurts us all. It is my belief that the basis of the antagonism which is directed against us as a group lies not in group relationships with the public, but rather in the individual relationship of the physician with the patient and the patient's family." Thus, public relations is every physician's personal responsibility. Like charity, it begins at home, with a physician's sincere desire to serve his patients to the best of his ability and to provide them with the kind of personalized care each desires.

"A Doctor Who Specializes in Me"

"I want the doctor to show he cares what happens to me," says the patient. "I don't want a cold fish!" Patients want a doctor who regards them as people, not just as interesting cases. A medical school dean recently pointed out that "the gap between doctor and patient, already disturbingly wide, is continually widening." The loss of personal rapport between doctor and patient is responsible for the rising cry for the return of the "good old horse-and-buggy doctor." Few people would entrust their care to him today, for often he had more sympathy than skill to offer. Still, he filled a definite need in his patients' lives, sometimes unmet today. He was combination physician, father-confessor and friend, and a human relations expert.

Impersonal medicine is not good medicine, no matter how scientific. Not all doctors are born extroverts or naturally skilled in the art of human relations, but the right attitude can be developed. Here are some suggestions from practicing physicians to help create a good relationship between doctor and patient:

Give the patient a warm welcome. "Be glad to see patients, even if you are a little tired; be frank, be prompt, never give the impression you are doing the patient a favor. Skill is no substitute for kindness."

Deal sympathetically with patients. "Listen with calm, unhurried and sympathetic attitude to the patient. Kindness and tactfulness are important. It is not easy to be pleasant as one nears the end of a long day, but every patient needs good humor, sympathy and a quiet manner, no matter how weary or upset the physician may be personally."

Don't appear hurried. "The physician should concentrate his entire attention on the patient during the consultation. His desk should be free from distracting material. If possible, he should refrain from answering the telephone while seeing a patient."

Treat patients as individuals. "Patients should receive special handling with reference to age and position. The older man expands in an atmosphere of respect and deference; the aging woman objects to any act that may emphasize her frailty. Adolescent youngsters object to being 'treated like children.' "

Get the patient's name right. "Make sure you know the patient's name before he enters the office—and learn to pronounce it correctly."

Get to know the patient as an individual. "Spend a few moments in conversation about the patient's interests. Let him talk about himself."

Place yourself on the patient's level. "Don't talk down to him. Contrive somehow to cultivate a non-medical vocabulary. Beware the Jehovah complex."

Friendliness, sincerity, tolerance, frankness, patience, gentleness—these are the qualities that the patient seeks in his doctor. A Kansas City *Star* columnist says: "I judge the medical profession by my doctor. When I go to him, I want to go as a person in whom he is interested rather than as a name on a filing card. I need his interest, his sympathy as much as I do his medical skill. I am not speaking here for a soggy bedside manner. I am speaking for warm sympathy."

"The art and the science of medicine must be blended in proper proportions and applied judiciously to the human being. This is good medicine."

PRoblem Corner

The doctor asks: "A local newspaper reporter has asked me to give him a story concerning local opinion about a new medical discovery. Is it ethical for me to cooperate with him or shall I refuse the information?"

Generally, the physician should cooperate with the science writer. If the story is of interest to the public, it should be told accurately. Times have changed insofar as release of newsworthy material by physicians to the press is concerned. Doctors are shedding their traditional reluctance and meeting with reporters to provide them with authoritative information on health and medical subjects.

This changed attitude has come about as a result of a revision in the Principles of Medical Ethics. Section 5 on the Relationship of the Physician to Media of Public Information now clearly states that: "The medical profession considers it ethical for a physician to meet the request of a component or constituent medical society to write, act or speak for general readers or audiences." The code states that physicians may provide information regarding important medical and public health matters that have been discussed during open medical meetings or in technical papers that have been published. Information regarding a patient's physical condition also may be released if the patient gives his permission; however, in both instances, the physician is advised to seek the guidance of appropriate society officials.

Many medical societies, in order to establish orderly procedures for providing information to the press on medical subjects have designated official spokesmen. Others have developed codes of cooperation that spell out responsibilities of physicians, hospitals, and press representatives in the three-way relationship. In every code of this type, it is clearly stated that "the primary responsibility of the doctor and the hospital is the welfare of the patient."

What happens when authoritative information on a medical news story is not provided has been forcefully demonstrated during recent months in coverage of the poliomyelitis vaccine story. No medical organization received advance information; physicians consequently were without valid reports on the merit of the vaccine. A barrage of conflicting stories appeared in the press. Confusion and fear were generated, and the entire poliomyelitis program threatened. In cities all over the country just the opposite thing happened a year earlier when physicians were asked to cooperate in the experimental poliomyelitis vaccine program. Medical societies, armed with the necessary information, were able to go to the newspapers, present the facts, and inform the public of the need for their cooperation. Fears were dispelled, and the program proceeded with great success. Mutual understanding between doctors and newsmen helps both groups promote the public welfare and render the public services to which the medical profession and the press are dedicated.

BUSINESS PRACTICE

ROLE OF THE LIFE INSURANCE TRUST IN ESTATE PLANNING

John R. Golden, Chicago

It is unfortunate but nonetheless true that family obligations are usually greatest when savings are relatively small or nonexistent. A man with a wife and small children is justifiably concerned with the future welfare of his family should his death occur before his estate has grown to a respectable size. The dilemma of how to provide the greatest family protection when resources are limited can be solved, at least partially, through the purchase of life insurance; but life insurance, of itself, cannot provide the type of family security most often desired.

As a rule, the first policies purchased will present no problem. Most likely they will be modest in amount and there will be no hesitancy in having them payable outright to the wife. But as the young man prospers and his insurance program gathers momentum, he is likely to become concerned at the prospect of having a substantial sum payable outright to his wife at his death. He may well have some misgivings as to whether or not her limited experience in financial matters will enable her to invest it prudently. Also, can he be certain that she will have the firmness to resist the entreaties of needy relatives and the importunities of eager salesmen? And will she have the innate wisdom to use the insurance proceeds in the best interests of herself and the children? Most men have confidence in the ability of their wives to cope with these problems but, if given any reasonable alternative, would prefer not to put them to the test.

Partly for this reason insurance companies permit the insured to direct in advance that in lieu of a lump-sum payment the proceeds shall be paid out in any one of a number of ways specified in the policy. The exact settlement options that may be selected will vary with each company, but the following are typical of those most widely used.

1. *Proceeds Held at Interest.*—Under this option the proceeds are retained by the company, which pays interest thereon to the primary beneficiary for life and the principal sum to the estate of the beneficiary or to other named persons, if desired. The company usually guarantees that such interest payments will not be less than a certain specified rate.

2. *Proceeds Payable in Installments.*—Under this option specific amounts for each $1,000 of face value of insurance will be paid monthly for any selected period varying from 1 to 30 years.

3. *Life Annuity.*—This option will provide equal monthly payments of a specific amount for each $1,000 of face value of insurance (depending upon the then attained age of the beneficiary) for the remaining lifetime of the beneficiary. In consideration of smaller annuity payments, the companies will guarantee to continue payments for a specified time, such as for 5, 10, or 20 years. Thus, after the death of the primary beneficiary, payments would be made to a secondary beneficiary until the expiration of the period selected.

4. *Income of Specified Amounts.*—Payments of a specified amount will be made periodically until the proceeds with interest credited annually at a guaranteed rate have been exhausted.

Through the use of some one or more of the above options, or other similar options that may be permitted under the terms of the particular policies, a husband can exercise considerable control over the manner in which the proceeds of his life insurance will be applied for his family's benefit. But in many cases, particularly where minor children may be involved, even these optional methods of payment will be much too limited.

The chances are that a young man who has embarked upon an insurance program to provide against the eventuality of his death has given little thought as to the exact manner in which the insurance proceeds will be used to benefit his family. If asked the question directly, he might express the hope that the funds would permit his family to continue living on much the same basis as during his lifetime. By that he means that if some member of his family is involved in an accident or is suddenly taken ill, he wants funds made available to cover the emergency; or if his son shows special aptitude in medicine, engineering, or law, he wants to go all out to help further his education. But insurance options do not readily lend themselves to such objectives. The insurance companies agree to pay out the funds in accordance with a fixed and predetermined plan and ordinarily no variations can be made to meet an unforeseen emergency or family crisis.

The chief objection to reliance upon optional settlements as the means for carrying out an estate plan is the lack of flexibility that they permit. This should not in any way be regarded as a reflection upon the insurance companies. It is the primary function of insurance to provide funds at the death of the insured; and the willingness of insurance companies to pay out the proceeds in several optional ways should be regarded as an additional service they are willing to perform. But if settlement options are too restrictive to give the degree of flexibility usually desired in a carefully considered estate plan, what alternative is available? One answer, of course, is the insurance trust.

Just what is an insurance trust? To many persons a trust of any kind is something mysterious and formidable that might be perfectly all right for others but is much too involved and complicated for them. To more and more people each year, however, the advantages of the trust arrangement as a means for the holding, management, and ultimate distribution of property are being recognized. Stripped of all technicalities, an insurance trust is a written agreement between the person making the trust and the trustee (usually a trust company) whereby the maker agrees to name the trustee as beneficiary of certain policies upon his life, and the trustee agrees to collect such insurance policies upon the maker's death, invest the proceeds and distribute the income and ultimately the principal, in accordance with the instructions set forth in the trust agreement.

Reliance upon insurance options to carry out an estate plan is much like buying a suit of clothes through a mail order catalog. The material might be excellent, but it can hardly be expected to fit as well as though it had been tailored to meet your individual measurements. In general, it can be said that the "fit" of your insurance trust is limited only by your own wishes and the skill of your attorney in drafting adequate provisions for the trust agreement. In order to appreciate the great

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Trust Counsel, Harris Trust and Savings Bank.

ibility in estate planning that can be achieved through use the insurance trust, it may be helpful to consider a more or typical example.

Mr. Thompson is 40 years of age, is married, and has three ldren ranging in age from 5 to 17 years. His annual income ow relatively high but up to the present he has been able to ld only a modest estate, consisting principally of his home, ch is now free of debt, and savings of a few thousand dollars. addition to this, he has taken out insurance over the years now amounts to $60,000.

t the present time, Mr. Thompson's insurance is payable is wife under options that will pay her an annuity for life, in the event she survives him by less than 20 years the xpended portion will be paid equally to his children. In the nt of his death at this time, Mrs. Thompson would receive fe annuity of approximately $200 per month.

fr. Thompson realizes the inadequacy of this amount to perly provide for his family in the event of his death but faith in the ability of his wife to cope with the normal blems that might be expected to arise. Of late, however, he become increasingly disturbed by these thoughts. 1. Would cient funds be available to meet an emergency? Mary, his ngest child, has been in frail health and might require special in the future. Also, what might happen if an accident should ll his wife or one of his children? 2. Suppose his wife uld become legally incompetent? The insurance company ld, of course, insist upon making payments to her conator appointed by the court. Or suppose that his wife did become legally incompetent but because of illness or accident unable to manage her affairs or look after the children? Or even worse, what might happen if his wife, also, should before the children were grown? His older son, Dick, has been graduated from high school and is about to enter ege. If all should go well for Mr. Thompson, a few more rs would see Dick well through his schooling and possibly ted upon his own career. His younger son, Paul, however, ust starting in grade school and his entire schooling lies re him. Suppose that at the time of his wife's death $30,000 his insurance still remains with the company. Under the on selected one-third of this amount would be paid to each is children. But would he be treating them all fairly? To k, if he had by then completed his education, the inheritance ht be a windfall. But what about Paul and Mary? The sum ld hardly seem adequate to give them the same start in life he had been able to provide for Dick.

eeply concerned over the very evident shortcomings of his te arrangements, Mr. Thompson sought the advice of his rney, his insurance agent, and a trust officer of his local k. After careful analysis of Mr. Thompson's financial rerces and thoughtful consideration of his objectives, they ised him that the only practical way to achieve anything roaching the flexibility he had in mind would be through operation of a trust.

fr. Black, his attorney, suggested two alternative ways for ating the necessary trust arrangement. One, by incorporating necessary trust provisions as a part of Mr. Thompson's last l; the other, by creating an insurance trust. Either approach ld give Mr. Thompson the flexibility he desired. However, the following reasons Mr. Black recommended that his client ablish an insurance trust.

. *Protection Against Creditors.*—In order to create a trust ler will, it would be necessary for Mr. Thompson to make his ate the beneficiary of his insurance policies. This would sub the proceeds to the claims of creditors of his estate. Making policies payable to the trustee of an insurance trust would have this effect.

. *Reduced Probate Expense.*—Attorney's fees and executor's nmissions are normally based upon the value of the estate sing through probate. Use of the insurance trust would keep se funds out of the probate estate and tend to minimize these sts.

3. *Savings in Inheritance Taxes.*—In Illinois and many other tes insurance proceeds that are payable to the estate are sub t to inheritance taxes. Insurance proceeds that are payable a named beneficiary or to a trustee under an insurance trust e generally exempt from state inheritances taxes.

As a result of their discussions, Mr. Black drafted an insurance trust agreement with a trust company as trustee. It included the following provisions that were of particular interest to Mr. Thompson.

1. *Payments During Lifetime of Mrs. Thompson.*—The trustee is directed to pay the entire net income earned from investment of the insurance proceeds to Mrs. Thompson in monthly payments. If the income should not be sufficient to meet the normal needs of Mrs. Thompson and any of the children who might be dependent upon her, or to meet any emergency such as unforeseen illness or accident, the trustee is directed to pay from principal of the trust sufficient funds for such purposes.

2. *Payments After Death of Mrs. Thompson.*—After Mrs. Thompson's death (or after Mr. Thompson's death if his wife should die before him or at the same time), the trustee is directed to hold the trust property as a single fund for the benefit of the children as a group. The instrument clearly states Mr. Thompson's desire that it be used for the primary purpose of affording substantially equal educational opportunities for each of his children and to defray, in whole or in part, the extraordinary expenses resulting from accident, illness, or infirmity. The trustee is given the right to use its discretion in making payments to or for the benefit of any one or more of the children.

3. *Distribution upon Termination.*—The trust is to terminate at the death of Mrs. Thompson or when the youngest surviving child attains age 21, whichever event should last occur. At that time the trustee is directed to divide the trust estate then remaining equally among the children. Should any child have died before that time leaving descendants, the deceased child's share would be distributed among such descendants. However, instead of making distribution outright to any minor descendant, which would necessitate the appointment of a guardian by the court, the trustee is authorized to hold the share of such minor until he or she attains legal age and until then to use it for the benefit of such minor.

The greater degree of flexibility permitted by an insurance trust over optional settlements was the principal feature that interested Mr. Thompson. It is not, however, its only role in estate planning. In larger estates, where liquidity is important for the payment of death taxes, insurance is frequently taken out for this purpose. In many of these cases the wife is named as beneficiary with the expectation that she will contribute from the insurance proceeds whatever funds are needed to pay taxes and other cash requirements.

There is, of course, no legal obligation for a wife to use the funds for this purpose, but a husband will not usually be greatly concerned over the possibility that his wife will fail or refuse to do so. Suppose, though, that she should die shortly after him and before she could make the funds available to his executor? Or, suppose that she should become incompetent? The executor of her estate or conservator appointed by the court would have no authority to use the insurance proceeds to furnish liquidity in her husband's estate.

Assume, however, that the wife collects the insurance and does turn over to the executor sufficient cash to pay all death taxes. Unless handled properly, this might well result in her having made a taxable gift to her husband's estate.

On the other hand, making the insurance payable to the husband's estate would needlessly subject the proceeds to the claims of creditors and to state inheritance taxes. Through use of the insurance trust, these objections can be eliminated while at the same time assuring that the funds will be available to furnish liquidity, if needed.

In more and more instances the insurance trust is becoming the basic instrument in estate planning. The provisions of the trust agreement are usually drafted in such manner as to direct the trustee in the investment, management, and distribution not only of the initial policies of insurance made payable to it as beneficiary but also of any additional policies made payable to it thereafter, as well as any property devised or bequeathed to it by the settlor or any other person.

This is how it operates. In the case of Mr. Thompson, his assets other than his insurance consist only of his residence and a small amount of savings. In this instance, because the value of the property involved is not great, he may decide to leave it outright to his wife and will so provide in his last will. However, if the property were greater in value, Mr. Thompson might leave it to the trustee of his insurance trust to be administered under the terms of that instrument. Mrs. Thompson, also, will execute a simple will. Her property, if any, will normally be left outright to her husband if he survives her, otherwise to the trustee of his insurance trust. Thus, after the deaths of both Mr. and Mrs. Thompson, the insurance proceeds as well as the separate property of each of them will be consolidated into a single trust for the benefit of their children.

The insurance trust, or for that matter other types of living trust as well, may serve an entirely different but equally important function in estate planning. Quite often upon retirement from active work, a man and his wife may move to another state where the climate and living conditions are more suitable to their new mode of life. Children, grandchildren, friends, and business associates are left behind. Very likely they have already worked out an arrangement for the distribution of their estates. Let us say that they have both made wills, creating trusts for the benefit of children and grandchildren and naming their local trust company as trustee. With the bulk of their assets located in the original state and perhaps the majority of their immediate family living there as well, it is probable that our retired couple would prefer to have their estate arrangements carried into effect by the bank or trust company with which they have been doing business for many years. But what effect will their change in residence have upon their estate plans?

The laws of many states prohibit trust companies located in other states from acting as testamentary trustees. It is possible, therefore, that the original trust company could not act in behalf of its customers if they should die residents of another state. However, state laws cannot prevent the establishment or interfere with the operation of trusts outside their jurisdiction. Thus, if an insurance or other type of living trust has been established with the local trust company as trustee, a later change in legal residence will have no effect upon its operation. In addition, the laws of many states that prohibit a foreign trust company from acting as testamentary trustee do not prevent property from being added by means of a will to an existing living trust even though the trustee is located in another state. Therefore, through the use of the living trust, our retired couple can be certain that their estate arrangements will be carried out by a trustee of their choice.

A final role of the insurance or other living trust is to assure privacy. A will offered for probate becomes a public document and can be examined by anyone interested or curious enough to do so. A person who is prominent or who lives in a small community may hesitate to have his personal family arrangements spread on record as a public document. The trust agreement, on the other hand, is a private undertaking between the settlor and the trustee, and its provisions are not open to public gaze.

115 W. Monroe St. (90).

MEDICAL FILM REVIEWS

Health: Your Clothing: 16 mm., black and white, sound, showing time 11 minutes. Technical supervisor: Dr. Dorothy Nyswander, University of California School of Public Health. Produced in 1953 by Centron Corporation for and procurable on purchase ($50) from Young America Films, 18 E. 41st St., New York 17, or on rental from state and local film libraries.

The purpose of this film is to promote a better understanding of the function, proper selection, and care of personal clothing and footwear. It deals with the function of clothing as protection for the human body, the importance of choosing clothing appropriate to the weather, and the "how and why" of caring for personal clothing. It emphasizes the effects of proper clothing on health and also points out esthetic values; however, the scenes about children calling attention to spots on their clothing are a little unrealistic. This film covers the subject adequately and should be helpful as a teaching aid for intermediate grades.

BUREAU OF INVESTIGATION

A CHICAGO CHIROPODIST IN HAWAIIAN HOT WATER

Anthony M. Senese of Chicago; Tucson, Ariz.; late of Hawa and now address unknown, is a chiropodist with medical ar bitions. He is an outstanding example of those few imposto who seem to be able to function adequately as interns or re dents in large hospitals. Outside the hospitals, however, th sooner or later run into grief. Inevitably the lack of form training shows up. The latest medical activity of Mr. Senese w reported in a special "Members' Letter" issued by the Bett Business Bureau of Honolulu, Hawaii, April 4, 1955. Sene had pleaded guilty to practicing medicine without a valid ter torial license. He was assessed a fine of $250, with $150 mitted on condition that he leave Hawaii within one week. Th he did. Senese has shown little regard for facts in filling o applications for membership in a scientific society or for e ployment in medical institutions. His ingenuity has made ne essary a careful check of his background. The following is chronicle of Mr. Senese's career, based on data in the files the Bureau of Investigation.

"MEDICAL" BACKGROUND

In applying for membership in a prominent scientific orga zation in 1946, Senese represented that he was born in Chica in 1912, graduated from a Chicago high school in 1930, ceived the degree of bachelor of science from the National C lege of Canada in 1934 and obtained the degree of doctor medicine from the Illinois College of Physicians and Surgeo Chicago, in 1938. He also claimed to have been a health offi for the Chicago Board of Education, and to have been engag in "research." The Better Business Bureau of Honolulu repo that official records show that Senese was born in Italy in 19 and was brought to Chicago as a child. The Chicago Board Education states that he graduated from McKinley High Sch in 1931. The claim of a bachelor of science degree from t National College of Canada in 1934 presumably refers to o of the enterprises of Earl Anglin James, who has more degr and accomplishments, according to his own admissions, th the proverbial dog has fleas. The course of study in Jam "institution," if any, would not meet curriculum requireme of any accredited university.

With respect to the claimed degree from the Illinois Colle of Physicians and Surgeons, Senese could not have gained a mittance to medical licensure examination on such a diplon This school (if one can call it that) was said to have be operated by persons then affiliated with the National Colle of Chiropractic, Chicago. In 1933 an Illinois court hand down a decision that refused to "graduates" the privilege taking examinations for medical licensure in Illinois. Conte porary news accounts describe the school as a "one-room c lege," with officers who "doubled in brass" as directo professors, and students. As to the claim that he had forme been "Health Officer, for the Board of Education of City Chicago (Investigator for 350 schools) under National Defe Program—also Health Officer for Civilian Defense of City Chicago," Senese undoubtedly referred to his having been e ployed by the Chicago Board of Education from 1940 unt 1944 as an assistant office secretary and subsequently as a investigator for the law department of the board (as a politic appointee). As for the "research," Senese was connected in som manner with the Iodine Research Institute of Chicago, operate by Dr. William C. McGregor, a combination physician an osteopath, and others. Actually, this was a "patent medicine enterprise. As a result of his activity, McGregor was later (194 convicted of violation of the Federal Food, Drug, and Cosmeti Act for misbranding his iodine preparations. The applicatio for membership in the society mentioned earlier apparently wa accepted but was challenged in 1948. The membership cease shortly thereafter, in the wake of an inquiry to the Bureau o Investigation.

The facts are that Senese enrolled at the Chicago College of Chiropody in January, 1932, and was admitted to the junior class on the basis of previous work allegedly done at a Chicago chiropody clinic for three months in 1931. He received the degree of doctor of surgical chiropody on June 7, 1933. The state of Illinois licensed him as a chiropodist on Jan. 29, 1934, and this license was renewed annually for the next six years. The Illinois Department of Registration and Education advises the Bureau that the license is no longer in effect. Senese was listed as a chiropodist in Chicago telephone directories from 1934 to 1942 and is described by other occupants of the building in which he had offices as having been there full time.

Senese was licensed as a naturopath in Arizona in 1935. The Arizona Board of Medical Examiners has pried out of its naturopathic counterpart the fact that such license was issued on the basis of a letter from the "Polytechnic College of Natural Therapeutics," Fort Wayne, Ind., certifying Senese's attendance for a "full four-year course" ending in June, 1935. In 1946 Senese wrote to the Arizona Basic Science Board from Chicago, as "N.D.," seeking a certificate under the "grandfather" clause. In December of that year his naturopathic license was reinstated.

Apparently naturopath Senese did not confine his Arizona "practice" entirely within the limits of "natural" healing. The Tucson Better Business Bureau has reported that in August, 1948 he was arrested on a charge of illegal medical practice. He pleaded not guilty, and trial was set for November, 1948. There is no record that Senese appeared for trial. The charge was dismissed in 1952.

"MEDICAL" CAREER

About 1948 Senese apparently dropped the naturopathic field to return to the attempted practice of medicine. In that year he filed his first application for admission to the Illinois medical licensure examinations. This was denied because of lack of complete records of his medical studies and lack of proof of an approved internship.

Senese then began negotiations with a reputable Chicago hospital for an appointment as an intern. In his application to the hospital, Senese claimed graduation from the "Universidad Libre Mexicana, Mexico City." His diploma was dated 1939. Translated freely, it read: "The Free Mexican University: Due to the scientific merits and moral virtues of Mr. Anthony M. Senese, M.D., with all solemnity bestows the degree of Doctor in Medicine of this Institution. 'For Humanity and Science.'" Also submitted was a transcript that alleged completion of a six-year medical course. The diploma and the transcript were signed by "El Rector F. Rodriguez Toriello" and "Secretary C. Espinosa T." They bore the seal of a Mexican notary public that was authenticated by the American consul in Mexico City. Curiously, the "transcript" included this notation: "This document was issued at the request of the interested party in the City of Mexico, D.F., on the 10th of October, 1939." But the notarization and authentication were not obtained until September, 1950. A diploma from this alleged Mexican school was actually of no greater value than that of his first claimed "Illinois College of Physicians and Surgeons." The Consul of Mexico, in a letter to the Bureau of Investigation, said in part: "We have received statement from the Secretaria de Educacion Publica (Public Education Department) that in Mexico there is not a University by the name 'Universidad Libre Mexicana.' In other words, as does not exist such University, the Mexican Government do not recognize any title issued by said 'Universidad Libre Mexicana.'"

In spite of the dubious character of his alleged medical education, Senese obtained appointment to an internship at the hospital mentioned. Completing the year of internship training in July, 1950, he again applied for admission to the Illinois license examinations. Again his admission was refused. He was advised that he could not be admitted to examination so long as a charge was pending against him in another state, and that the Universidad Libre Mexicana was not an accredited institution. Although barred from licensure, Senese continued to pose as a physician. On completion of his internship he secured a temporary job as an assistant surgeon at an Indiana steel plant. During the next three years he shifted his scene of operations to various hospitals in other states, including Florida and Ohio, while continuing his attempts to gain admissions to the Illinois and Florida examinations.

Armed with a genuine intern certificate and the credentials from the Mexican "universidad," Senese filed a mandamus petition against the Illinois medical board. Finally his persistence paid off. A judge of the Superior Court of Cook County signed an order that compelled the board to admit Senese to the examinations. He has taken the examination five times and, as could be expected, failed each time. Despite his license difficulties, however, Senese kept his hand in medicine. He secured an appointment in 1954 as a resident in anesthesiology in another of Chicago's better-known hospitals. He also found part-time work in other hospitals in the area. The "resident in anesthesiology" was so employed from January to September, 1954, although the hospital was notified by the Bureau of his imposture in April of that year.

In August, 1954, Senese applied for a position with a Honolulu hospital, but not as a resident—he aspired to be the head of the department of anesthesiology. In his application he claimed graduation from "the University of Mexico, located in Mexico City." He also claimed to have had "a six month post-graduate course in radiology at the University of Illinois." The head of the Department of Radiology has denied such alleged accomplishment, stating that Senese "never did do any work in this department, and I doubt that he spent more than a total of one week in the department. I turned no grade in to the Graduate College because his record was incomplete, and I had in fact banished him from the department as undesirable." Senese actually obtained letters of recommendation from generous, if undiscerning, physicians and supplemented these with one of his own creation. Using hospital stationery and the signature of the retired chairman of the department of anesthesiology, he highly recommended himself while falsifying actual dates of his service at the hospital. Another of the letters he used in applying for a position as a doctor of medicine contained this rather significant statement: "I have always admired the fact that he educated himself." While self-education may generally be regarded as an admirable accomplishment, it is hardly commendable in the field of undergraduate medical training.

The appointment as head of the department of anesthesiology came through, and the erstwhile resident traveled to Honolulu, expenses paid, in a manner befitting his new status. The appointment may have gotten Senese to Hawaii, but it did not keep him there long. According to the Better Business Bureau of Honolulu, he was discharged for incompetency approximately six weeks after his appointment. Following that, he wrote to various hospitals and physicians, seeking employment as a physician and surgeon or anesthesiologist. He apparently raised doubts as to his medical qualifications in the mind of the doctor charged with care of employees of a canning company on the Island of Molokai, who contacted the Chicago headquarters of the firm. The medical director called the Bureau of Investigation and was given the essentials of the Bureau's file. A copy of that letter was sent to the Hawaiian Territorial Medical Examiners.

The Better Business Bureau located Mr. Senese on another island, substituting temporarily for physicians who had left to attend a medical meeting in the United States. An investigator, posing as a patient, was given a diagnosis and some medication, for which she paid a fee. This information was turned over to the prosecutor's office and, as a result, Senese's medical career in Hawaii came to the end mentioned earlier. Just how many other impostors are serving as residents in large institutions in this country is not known. It would seem, however, that the checking of medical credentials, particularly of those whose degrees come from obscure institutions, should be given serious consideration by hospital administrators.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Headaches Associated with Gastrointestinal Disturbances. Z. R. Morgan. Am. J. Gastroenterol. 23:427-434 (May) 1955 [New York].

Many conditions associated with headache should be considered by the gastroenterologist. The most frequent gastrointestinal symptoms accompanying headache are abdominal distress, pain, nausea, vomiting, anorexia, epigastric fulness, pyrosis, constipation, and diarrhea. There are various types of headache, and the therapy for them differs. Relief may be obtained by proper treatment. The chief causes of headache are familial, nervous, toxic, allergic, reflex, and traumatic. Headaches often have their origin in certain organs or systems, namely cardiovascular, gastrointestinal, cerebral, blood dyscrasias, anemia, otic and ocular disorders, gynecologic, and renal disturbances. Besides having their origin in one of these systems, headaches may also originate from hormonal disturbances, sugar imbalance, fatigue, and worry. They are often associated with systemic diseases. The causes of headache may be multiple including alkalosis associated with high intestinal obstructions; duodenal stasis; splanchnoptosis; gastrointestinal dysfunction resulting from vagal irritation; typhoid fever; toxemias without fever associated with diseases of the liver and kidney; exposure to extrinsic poisons such as carbon monoxide, arsenic, or lead; low blood sugar level; cecal stasis caused by atony, adhesions, or congenital bands; fatigue; and constant or intermittent emotional stimulation or conflict. The causes of headache observed by the gastroenterologist thus require an understanding of the phenomena responsible for them.

Methyl Testosterone for Migraine in Women: Report of 60 Cases. R. C. Moehlig. J. Michigan M. Soc. 54:577-579 (May) 1955 [St. Paul].

Methyl testosterone was used in 60 women with migraine. Eleven derived no benefit from this treatment, but 49 were improved. Not only were their attacks of migraine relieved, but their sense of well-being and mental attitude improved. In an earlier group of patients the author gave 20 mg. of methyl testosterone daily for four weeks followed by daily doses of 10 mg. for an additional two weeks, but now he gives 10 mg. daily for four weeks, then 10 mg. every other day for an additional eight weeks, and from then on the medication is given every third day for an additional eight weeks. The smaller dose was found to be just as efficacious as the 20 mg. dose and less likely to give undesirable effects. Some patients continued taking the medication every third day for three years, but the majority took it for only three months. When relapses occurred they usually came on three months after the discontinuance of therapy, but the recurrent attacks of migraine were generally less severe than were the original attacks. Treatment with methyl testosterone must be carefully supervised since undesirable secondary effects are likely to result in women. Hirsutism resulted in 12 of the 60 women and necessitated interruption of treatment, and when treatment was resumed later, the doses were reduced, or spacing between doses was prolonged. Acne appeared in 27, deepening of voice in 13, menstrual disturbances in 29, increase in weight in 40, nervousness in 18, and increase in libido in 28 of the women. Furthermore, prolonged administration of testosterone may produce thyrotoxic symptoms in women with goiter and lessening of the carbohydrate tolerance in diabetic women. Nevertheless, the author believes that methyl testosterone deserves a trial in women with migraine headaches.

Clinical and Physiological Studies on the Use of Metacortandracin in Respiratory Disease: I. Bronchial Asthma. A. L. Barach, H. A. Bickerman and G. J. Beck. Dis. Chest 27:515-527 (May) 1955 [Chicago].

Prednisone (Metacortin) was given in four divided doses daily, generally at mealtime and between 11 and 12 p. m., to 30 patients with bronchial asthma. In patients with intractable bronchospasm a dosage of 60 to 80 mg. a day was used for one or two days; 40 to 60 mg. per day for three or four days; and 10 to 30 mg. daily thereafter, depending on the response of the patient. In patients in whom a maintenance dosage of 60 to 100 mg. of hydrocortisone had previously been used, the dosage of prednisone varied between 20 to 40 mg. a day. The response to treatment with either cortisone, hydrocortisone, or corticotropin was known in 18 of the 30 patients in this series. The short-term treatment with prednisone caused disappearance or relief of bronchospasm and asthmatic dyspnea in 29 of the 30 patients and the ability to eat a regular diet with added salt and without the use of supplementary feeding of potassium in patients without heart disease, in contrast to the need for a salt-poor diet and potassium administration with the administration of cortisone, hydrocortisone, and corticotropin. In 5 patients previously on maintenance therapy with hydrocortisone, the substitution of prednisone for hydrocortisone resulted in an average weight loss of 6 lb. in one week. In six patients mooning of the face became much less prominent. The subjective effect of eating a regular diet in the patients without cardiac failure was a happy one. The side-effects were slight, resembling, but to a lesser extent, those seen with cortisone treatment, i. e., mental stimulation, abdominal discomfort, occasional headache, and transient dizziness. Respiratory function tests confirmed the clinical impression of decrease or disappearance of bronchospasm. The authors believe that this new steroid hormone is of great value in the treatment of intractable bronchial asthma. Furthermore, prednisone, in contrast to cortisone, is safe in patients with persistent asthmatic dyspnea and with associated cardiac insufficiency. Further studies will be necessary to ascertain to what extent prednisone will lower resistance to infection. The long-term effects of prednisone are not known, but all of the side-effects of cortisone, except for salt and water retention, have already been observed.

Symptomatology and Therapy of Thrush-Mycosis of Lung. W. Straube, W. Hahn and H. Seeliger. Deutsche med. Wchnschr. 80:753-755 (May 13) 1955 (In German) [Stuttgart, Germany].

The occurrence of secondary mycosis of the lung caused by Candida albicans is reported in a 20-year-old man who had been treated at home by his family physician for bilateral severe pneumonia with large doses of Omnacillin (a suspension of procaine penicillin G in 1 cc. of concentrated Omnadin [a mixture of reactive protein bodies from various nonpathogenic fungi with biliary lipids and animal fats]), Supracillin (a penicillin-streptomycin preparation), chlortetracycline, oxytetracycline, and chloramphenicol. The roentgenologic picture was that of caseating pneumonia that did not respond to the antibiotic treatment. There was complete failure of the immunologic defense powers. When admitted to the hospital, the patient had severe dyspnea and circulatory collapse refractory to treatment, mycotic stomatitis, an extensive maculopapular eruption on the trunk and the ex-

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mities, diarrhea, and hemoptysis. The liver was tender and larged. Mycobacterium tuberculosis, mycelia, and C. albicans re observed in the sputum. C. albicans also was found in the es. The patient was given streptomycin, isoniazid, and Solupronal (a 20% aqueous solution of a mixture of equal parts sulfamerazine and of the 4-amino methyl benzene sulfonade salt of sulfathio-urea). After 85 days of treatment the pant improved and was discharged from the hospital, but mas tuberculous infiltration was still revealed by the roentgenom. Two and a half months after his discharge the roentlogram showed restoration of conditions to almost normal h slight pleural adhesions on the left side. The occurrence of umonia caused by C. albicans in the course of treatment with e doses of antibiotics must always be considered a serious nplication, since as a rule only patients with lowered resiste are affected. The destruction of the physiological bacterial a results in a change of the causative agents in favor of the mally nonpathogenic yeasts and fungi and in severe disturbes of the vitamin metabolism. Mycosis of the lung caused by albicans must be considered in the differential diagnosis of te pulmonary disease. The reported case suggests that the ications for antibiotic therapy should be carefully observed. erminations of resistance are indispensable, and signs of unirable side-effects must be recognized promptly if treatment is longed. Because of the great risk associated with the continum of antibiotic treatment in patients with lowered resistance l mycosis of the lung, Solu-Supronal in large doses should be n a therapeutic trial.

alosis and Hypopotassemia in Anorexia Mentalis ("Starva-Alkalosis"). P. H. Rossier, D. Staehelin, A. Bühlman and Labhart. Schweiz. med. Wchnschr. 85:465-468 (May 14) 1955 German) [Basel, Switzerland].

eterminations of serum electrolytes and carbon dioxide conts of plasma or serum and measurements of blood pH were ried out in 10 women between the ages of 20 and 28 years n anorexia nervosa. In the patients with severe anorexia vosa, a fixed alkalosis was observed that was completely npensated by hypoventilation with retention of carbon diox in one patient, and only incompletely compensated in aner. In the patients with mild anorexia nervosa, the pH of arterial blood did not differ much from that in normal pers. Of the seven patients with severe anorexia nervosa, six had opotassemia. The potassium level in the serum of one of these ients was extremely low (7.6 mg. per 100 cc.) and was ociated with changes of the electrocardiogram typical of hypoassemia. In patients with definitely low serum potassium els, the potassium concentration in the erythrocytes also below normal, and the excretion of potassium in the urine minimal. The concentration of sodium in the serum of all patients was normal or slightly increased. In patients with ere alkalosis the chloride values in the serum were low. Alkais and hypopotassemia are the results of prolonged underrishment induced by anorexia nervosa. These findings are contrast to those of acidosis, which may be observed in ting of short duration. A negative potassium balance of longed duration apparently is the cause of the hypopotasnia and of the reduction of the intracellular potassium. In onic starvation the kidneys are not able to maintain potasm balance in the serum. The alkalosis is of a metabolic type, l an exchange between sodium ions and hydrogen ions in tubules may also be a pathogenetic factor. The recognition alkalosis associated with hypopotassemia in patients with rexia nervosa is not only of theoretical interest, but also importance with regard to differential diagnosis from dises of the pituitary body (Simmond's disease) and from dises of the adrenals. Although anorexia nervosa is primarily psychotherapeutic problem, severe cachexia and dehydration y require infusion therapy. Potassium chloride should be ded to the infusion in order to obtain an isotonic concentran of from 15 to 20 mg. per 100 cc. The administration of concentrated potassium solution is indicated when the serum tassium level is below 10 mg. per 100 cc.

Thyroid Function in Disorders of the Hepatic Parenchyma. B. R. Scazziga, L. L. Barbieri and T. Béraud. Schweiz. med. Wschnschr. 85:471-477 (May 14) 1955 (In French) [Basel, Switzerland].

Thyroid function studies, including determination of the basal metabolic rate, the serum protein-bound iodine, the uptake of radioactive iodine (I^{131}) by the thyroid after the administration of 200 μc of I^{131} on a fasting stomach, and the radioiodine conversion ratio, were carried out in 33 patients with disorders of the hepatic parenchyma. Of these, 19 had epidemic hepatitis, 10 had alcoholic cirrhosis of the liver, and 4 had primary or metastatic carcinoma of the liver. In the patients with epidemic hepatitis, the serum protein-bound iodine levels were high compared to normal values but the uptake of radioactive iodine by the thyroid and the radioiodine conversion ratio were low as compared with those in healthy persons. The patients with cirrhosis did not show significant changes in the serum protein-bound iodine levels, the uptake of radioactive iodine by the thyroid, and the radioiodine conversion ratio as compared with results obtained in normal persons. Two of the four patients with carcinoma of the liver showed higher serum protein-bound iodine levels than those observed in normal persons, but the uptake of radioactive iodine by the thyroid was low and the radioiodine conversion ratio was definitely below normal. These two patients had extensive metastases and their general condition was poor. The two other patients with carcinoma of the liver did not show a significant disturbance of the thyroid function. These observations suggest that impairment of the hepatic parenchyma may entail a disturbance of the catabolism of thyroxine manifested by an increase in the ratio of circulating hormone and accompanied by secondary thyroid hypofunction. Hyperthyroxinemia on one hand could be the expression of an insufficient destruction of the hormone at the level of the impaired hepatic cell, and on the other hand it could be the sequela of a disturbance of biliary elimination of thyroxine. The increase in the ratio of circulating hormone induces checking by the pituitary, which explains the signs of thyroid hypofunction revealed by the radioiodine tests. The absence of significant changes of thyroid functions in the patients with cirrhosis suggest that the impairment of the liver was less generalized than in the patients with hepatitis and that the functionally unimpaired portion of the parenchyma was sufficient to insure a normal catabolism of thyroxine. The same explanation seems to be warranted in the two patients with carcinoma of the liver and normal thyroid function. These observations in addition made evident the difficulties of interpreting thyroid function tests when peripheral extrathyroid factors are exerting their influence on thyroid function.

Alimentary Disturbances of Circulation as Cause of So-Called Dumping Syndrome. W. Schrade and R. Heinecker. Schweiz. med. Wchnschr. 85:481-488 (May 14) 1955 (In German) [Basel, Switzerland].

The clinical symptoms of which the so-called dumping syndrome consists indicate that disturbances of circulation may play a part in this sequela of gastrectomy. Besides signs of disturbed blood perfusion of the periphery, and particularly of the brain, alterations of blood pressure may be observed after the ingestion of food in patients who undergo gastrectomy. These alterations consist partly of rise and partly of lowering of blood pressure occasionally to collapse levels, while the frequency of the pulse increases regularly. The authors made sphygmographic studies of circulation immediately after oral administration of 100 gm. of dextrose in 11 patients who had been subjected to gastrectomy and after intrajejunal administration of dextrose in 3 normal persons. The amount of blood circulated through the heart was greatly changed immediately after the administration of dextrose in the patients operated on. The cardiac output and the minute volume of the heart either increased as they do in persons not operated on, the increase occurring earlier and more extensively than in healthy persons; or the cardiac output and the minute volume dropped in an unphysiological way as a result of the alimentary stimulus. The increase in the minute volume is related to an active hyperemia of the region of the splanchnic nerve and the decrease of the minute volume manifests a passive "bogging down" of the blood in the digestive organs. In patients standing erect, these alimentary reactions combine with the orthostatically conditioned displacement of blood and thus cause the risk of an alimentary precollapse or collapse. Alleviation of the dumping syndrome in the recumbent position is not the consequence of delayed emptying of the stomach but is conditioned by the hemodynamics. The alimentary disturbances of circulation are the real cause of the general complaints of patients with dumping syndrome. The abnormal blood perfusion of the region of the splanchnic nerve after ingestion of food causes impairment of the blood supply to the rest of the body, particularly to the brain. The marked hyperemia of the digestive organs and thus the occurrence of the dumping syndrome can to a great extent be prevented mechanically by the use of a body bandage.

SURGERY

The Management of Instrumental Perforation of the Esophagus. J. T. Howard. Am. J. Gastroenterol. **23**:399-410 (May) 1955 [New York].

Perforation of the esophagus resulting from examination with the esophagoscope and a rubber-tipped obturator to facilitate the passage of the stiff esophagoscope or from simple stretching with the pneumatic dilator occurred in five patients between the ages of 48 and 70 years with dysphagia. Esophageal instruments should be passed into the esophagus gently and without undue apprehension. Because the hypopharynx of a woman weighing 95 lb. (43 kg.) or a frail 70-year-old man is not as resistant to trauma as that of a younger man of average nutrition, it is essential to pay attention to any postinstrumentational complaints of the patients and to treat these promptly. The patient should be hospitalized, and if the perforation is relatively high in the esophagus treatment should consist of placing the patient in the Trendelenburg position, total intravenous or tube feeding with suction on the lower esophagus, and antibiotics. When conservative measures are unavailable or if the injury to the esophagus seems to be too extensive for conservative treatment, suturing of the perforation should be performed.

Mechanical Intestinal Obstructions: A Study of 1,252 Cases. G. A. Smith, J. F. Perry Jr. and E. G. Yonehiro. Surg., Gynec. & Obst. **100**:651-660 (June) 1955 [Chicago].

In 1,252 episodes of obstruction in 1,079 patients the most common causes were postoperative adhesions, primary and recurrent carcinoma of the intestine, and external hernia. Jejunal and ileal obstruction was most commonly due to adhesions and external hernia, while primary carcinoma was by far the most frequent cause of colic obstruction. Patients were from all age groups, but the majority were middle aged or older (40% were over 60 years old). There were 157 deaths from all causes, a patient mortality rate of 14.5%, and a case mortality rate of 12.5%. If only the patients who died from intestinal obstruction are considered after excluding 68 patients whose deaths were due to unrelated causes or who were moribund on admission, the patient mortality rate and case mortality rate are reduced to 9 and 7.5% respectively. In treated patients, the prognosis was less favorable in those with jejunal and ileal obstruction than in those with colic obstruction, apparently because of the more frequent occurrence of gangrene in those with obstructions of the small intestine. The major factors that adversely influenced survival were gangrene, intestinal perforation, severe intestinal distention, and extreme youth or extreme age of the patient. A 12-hour trial of intestinal suction is warranted in small-intestine obstructions without signs of strangulation. When active peristalsis is present the chances for decompression are good, but the atonic intestine of late mechanical obstructions usually thwarts nonoperative attempts at decompression. Patients treated by suction are reevaluated at the end of 12 hours by roentgen examination of the abdomen. If there has been a significant reduction in distention and if clinical improvement is progressive, suction is continued, but signs or symptoms suggesting strangulation, obstruction, or failure to relieve distention are indications for operation. Rapid intubation of the small intestine using the flexible stylet with controllable tip offers the surgeon some control of the time required for passage of the tube as well as placement of the catheter into the jejunum at the time of initial intubation. Distention is managed at operation by passage of the tube through the intestine with the stylet or by aseptic decompressive enterotomy. The application of the stylet as a guide for rapid small-intestine intubation at the time of operation has now been used successfully in over 50 patients. Enterostomy has a limited place for decompression in patients nearing the moribund state and in patients with early postoperativ distention proximal to a colic anastomosis. The latter group i best managed by an emergency cecostomy or appendicostomy Strangulated obstructions require immediate operations with th intent of primary resection of nonviable intestine. Although oc casionally colic distention can be relieved by suction or oth nonoperative methods of decompression, the treatment of col obstruction is primarily surgical. Giving antibiotics preoper tively and for several days postoperatively may reduce po operative peritonitis.

Surgical Significance of Gastrointestinal Bleeding. C. Mathews Jr. and B. Sugar. Am. J. Surg. **89**:1177-1181 (June) 1955 [N York].

The mortality from massive gastrointestinal hemorrhag still alarmingly high. Among 215 cases studied at the San F cisco Hospital during the years 1947-1952, the over-all mo ity rate was 33%. The mortality rate from proved gastri duodenal ulcer was 12.3%. Fatal gastrointestinal bleeding al invariably has its source above the ligament of Treitz and ca controlled adequately in carefully selected patients by emerg operation during the acute stage of bleeding. An emerg operation is indicated in a selected group of patients who d respond to conservative measures and in those who have r rent bleeding while under observation. It should be bor mind that the death rate from hemorrhage increases sh after the age of 45. There seems to be a definite correlatio tween bleeding and the presence of arteriosclerosis. W patient with suspected acute gastrointestinal bleeding is adn to the hospital, blood studies are made at once, including to rule out hemorrhagic diathesis and primary blood dis A slow drip blood transfusion is started. Failure to respo transfusion is the major indication for early operation. and blood pressure are recorded every 15 minutes. Evide severe or continuing blood loss is best obtained from the ence of pallor, restlessness, and sweating. Constant obse of the patient is essential. If stabilization occurs, as it does after two or three 500 cc. whole blood transfusion if bleeding does not recur, conservative medical mana may be continued. Massive gastrointestinal hemorrhage tients over 45 is a definite indication for later gastric resec

Postmastectomy Lymphedema: A Clinical Investigation Causes and Prevention. R. P. Villasor and E. F. Lewison Gynec. & Obst. **100**:743-752 (June) 1955 [Chicago].

In order to evaluate the numerous factors that may be to the development of lymphedema of the arm after mastectomy and to devise measures to prevent this u complication, studies were made on 51 patients with ar ing who had undergone radical mastectomy; 28 wom were free from this complaint after mastectomy served trols. All patients were selected and did not constitute a utive series. Patients with local metastases were include study, but those with remote osseous or pulmonary m were excluded. The cause of postmastectomy lymphe difficult to determine and may vary from patient to pat single common denominator could be found that wo sistently account for the development of this distressin tion. In 57% of the first series of patients, postmas lymphedema developed shortly after operation without minant inciting factor. Infection accounted for the con 16% and impaired venous return for another 6%. Lym lso followed venipuncture, over-exertion of the arm, and supra- avicular metastassis. In 16% of the patients, the onset of lym- hedema was delayed and the precipitating factor was unknown. he following factors, alone or in combination, may have some :aring in the development of postmastectomy lymphedema:) infection, (2) axillary metastases, (3) postoperative radio- erapy, (4) operative scars that are tight and encroach on the m and axilla, (5) injury or thrombosis of the axillary vein,) excision of the clavicular head of the pectoralis major muscle,) delayed mobilization of the arm, (8) injections into the homo- teral arm, and (9) local or regional recurrences. Since treat- ent of the swelling is seldom satisfactory the authors enumer- e as preventive measures those designed to avoid the afore- entioned causal factors.

ıe Walking Venous Pressure Test in Relation to Occlusive rterial Disease in the Lower Extremities. J. H. Schneewind, N. Mansour and W. J. Grove. Surg., Gynec. & Obst. 100:697- 12 (June) 1955 [Chicago].

The measurement of venous pressures in the legs during exer- se is a much more valuable index of the efficiency of venous ainage than is the measurement of venous pressures during st. In a series of 16 patients with arterial insufficiency of the wer extremities, none of whom had serious venous derange- ent, the walking venous pressure tests caused a fall in venous essures due to the pumping action of the muscles. The authors ırned to direct their attention to the type of venous pressure sponse obtained immediately after exercise. These tests were ıne before and after lumbar sympathectomy. Patients with oderate arterial insufficiency showed essentially normal venous essure return immediately after exercise and those with more vere arterial obstruction showed moderate to marked delay venous pressure return immediately after exercise. The find- g of an impaired postexercise venous pressure response seemed correlate best with the degree of arterial occlusion as shown arteriography. In every patient in whom an absent or delayed ıstexercise venous pressure pattern was noted prior to sympa- ectomy, a much improved or normal postexercise venous essure response was observed after operation.

ısttraumatic Dystrophy. J. Bonnet. Arch. chir. neerl. 7:37-64 o. 1) 1955 (In English) [Arnhem, Netherlands].

Bonnet believes that the syndrome of post-traumatic dys- ophy includes several clinical pictures hitherto regarded as parate post-traumatic disturbances, e. g., fracture, edema, hard aumatic edema of the dorsum of the hand, erythromelalgia, nyotrophy, and painful osteoporosis. Only causalgia is often ll regarded as a separate clinical entity. Some authors still ınnect Sudeck's name with these post-traumatic forms of dys- ophy. A clinical analysis of about 100 cases of post-traumatic rstrophy led the author to differentiate four stages of post- aumatic dystrophy, which differ from most of the classifications und in the literature. The first stage is characterized by vaso- latation; its symptoms are hypertrichosis and finely spotted calcification of bone in addition to a warm, dry, edematous in. The second stage is characterized by vascular instability d by fluctuations in the clinical manifestations. During the ird stage vasoconstriction is virtually constant and results in e atrophy of all tissues. The fourth or residual stage is aracterized by normal circulation; there is no pain; the tem- rature and the appearance of the skin are normal; there is rsistent atrophy of muscles and bone; and the contractures e irreversible. The therapeutic results are best when treatment instituted at an early stage. It is therefore important that a ndency to dystrophy in cases of injury be recognized early, d that its further progression be prevented by avoidance of adequate or insufficiently prolonged immobilization, of opera- ons, of refracturing, and of massage. Satisfactory results were a rule obtained during the first stage by immobilizing the tremity with the aid of a zinc sulfite bandage, an arm sling, r plaster-of-Paris. Passive movements and massage are in- dvisable, as they may lead to exacerbation of the dystrophy. ctive movements are permitted in mild cases. Procaine injected cally may produce definite improvement in patients with ains at definite points, such as at the fractured styloid process in patients with Colles' fracture. Excision of a thrombotic vein or of cicatricial tissue may likewise be helpful. In the absence of marked trigger points, or when local procaine injections do not give satisfactory results, sympathetic block may produce improvement. The addition of epinephrine to the solution used in sympathetic block causes local vasoconstriction. It prolongs and enhances the effect of procaine by less rapid absorption and does not antagonize this effect. On the basis of these theoretical considerations, epinephrine was added to the 1% procaine solution used in sympathetic block. The addition of epinephrine in alternate cases showed that it improved the effects, and since then the author has been adding it to all solutions. The author suggests that post-traumatic dystrophy is the result of changes in the sensitivity of the blood vessels (and perhaps of the sweat glands) to central stimuli under the influence of local and regional reflexes caused by the trauma. It seems probable, moreover, that these reflexes originate particularly from the injured capsules and ligaments of the smaller joints.

NEUROLOGY & PSYCHIATRY

Fatal Forms of Mumps Meningoencephalitis. Mazaré and Guffon. J. méd. Lyon 36:343-349 (May 5) 1955 (In French) [Lyon, France].

A search of the world literature, after the development of fatal meningoencephalitis in a 19-year-old man following mumps, showed only 29 earlier instances of this rare complication. The onset of the patient's illness was mild, but on the seventh day his temperature rose without warning to 101.3 F, subsequently remaining between 102.2 and 104 F. General convulsive crises developed, and on the 10th day the patient was admitted to the hospital in coma vigil without stertor. Examination showed a bilateral parotid swelling in regression, unmistakable signs of meningeal involvement, and orchitis on the left side. The treatment the patient had been receiving—streptomycin, penicillin, and chloramphenicol—was continued with the addition of cardiac stimulants, adrenal cortical extracts, a sedative, and ice on the head. His condition grew steadily worse, however, and three days later he died in spite of an attempt at hibernation therapy. Meningoencephalitis complicating mumps usually follows the parotid involvement, but in five patients it appeared first. The parotitis, which is bilateral, is always intense and is often associated with submaxillitis in the fatal cases. Only 10 of the recorded deaths occurred in children under 11, as compared with 16 in young adults aged 19 to 25. A few reports failed to state the patient's sex, but of the 22 patients for whom this information is given 19 were males. A period of improvement and reduction of fever usually precedes the sudden rise in temperature that marks the onset of the meningoencephalitis. Disturbances of consciousness dominate the clinical picture and convulsions, which seldom occur in the benign forms, are not infrequent, especially in children. Three types of the disease—paralytic, psychic, and convulsive—can be distinguished according to the symptoms predominating in each case. The course is usually rapid: the patient soon becomes comatose and death follows, often within 4 to 15 days. There is no specific treatment, but the excellent results obtained with hibernation in severe forms of acute infectious meningoencephalitis due to causes other than the mumps virus suggest that it should be given a further trial.

Reserpine in Treatment of Chronic Psychotics: Preliminary Observations. E. S. Foote. Brit. M. J. 1:1192-1193 (May 14) 1955 [London, England].

Thirty-two chronically mentally disturbed men were treated with reserpine for periods of up to five months. In most, great improvement was noted in their habits and personal appearance and in their ability to occupy themselves. Impulsiveness and incontinence disappeared. A marked quieting effect was noted. Even those showing definite signs of dementia were superficially improved. Side-effects were slight and occurred in only a few. Most patients who are going to respond show signs of this within a week or two, but some received the drug for three months before definite improvement was noted. It is therefore suggested that unless the patient's condition deteriorates the method should be given at least a three-month trial. The promising results obtained in this small series of mentally disturbed patients suggest that an extensive trial of reserpine in patients whose psychoses are of recent onset should be conducted. Full use should be made of occupational and recreational therapy to provide the stimulus for activities that the drug appears to permit.

Mental Changes Observed in 152 Psychotic and Non-Psychotic Patients During INH Medication. R. Rosenfeld. Dis. Chest 27:558-562 (May) 1955 [Chicago].

Isoniazid was given either alone or combined with streptomycin, p-aminosalicylic acid, pneumoperitoneum, pneumothorax, phrenic nerve crush, or a thoracic operation in 152 patients with tuberculosis, of whom 149 had been mentally ill, mentally deficient, alcoholic, or psychopathic prior to treatment with isoniazid. Two had been mentally normal before isoniazid medication, and one was mentally normal during the last eight years prior to isoniazid treatment but had been hospitalized for a manic-depressive psychosis twice (8 and 10 years earlier). Those three had been committed to the hospital for an acute psychosis that developed during isoniazid treatment, following extensive chest surgery in another tuberculosis hospital. Isoniazid was given in doses ranging from 200 mg. to 500 mg. daily for two weeks to one year. Various stages of pulmonary tuberculosis were present in 148 patients. Two had tuberculous lymphomas and two bone tuberculosis. The mental diagnoses were: schizophrenia in 79, manic-depressive psychosis in 6, senility in 4, alcoholism in 8, general paresis in 3, mental deficiency in 12, cerebral arteriosclerosis in 9, involutional psychosis in 2, Huntington's chorea in one, and sociopathic personality in 25. The effects of isoniazid on the tuberculosis did not differ appreciably from the results obtained with this drug in other tuberculosis hospitals. Isoniazid, besides being a potent antituberculous drug, has a stimulating effect on the central nervous system. It can cause epileptic seizures in epileptics, and its use is therefore inadvisable in such persons. Besides this side-effect isoniazid seems also to be able to influence the behavior and mental condition of psychotic and nonpsychotic persons. The author observed striking mental improvement in only one patient, whereas 24 others showed mental improvement to a slighter degree. Patients who had been uncooperative became cooperative. Hostile patients became friendly and sociable. Untidy ones became clean. Aggressive patients, who had formerly been in restraint for long periods, became quiet and could be taken out of restraint. Stuporous ones became more alert. There was apparently no connection between improvement of the tuberculosis and improvement or changes in the mental status.

Rehabilitation of the Hemiplegic Patient: A Clinical Evaluation. F. J. Mahoney, D. W. Barthel and J. P. Callahan. South. M. J. 48:472-480 (May) 1955 [Birmingham, Ala.].

Treatment of the hemiplegic patient should not be limited to medical care in the case of cerebral vascular accidents or surgical care in cases of brain injuries or brain tumors but should progress to rehabilitation. Survival of a hemiplegic patient as a bed-ridden invalid benefits neither the patient nor his family. The aim of the rehabilitation treatment should be: (1) independent "self-care" and ambulation; (2) recovery of all possible muscle power and range of motion; and (3) training in coordination, balance, and endurance sufficient to permit as much independent "self-care" as possible. The goal should be set individually according to what each patient can attain with whatever amount of disability he has as a result of his cerebral vascular accident or brain injury. Most hemiplegic patients, even when there is little or no return of muscle function in either the upper or lower extremity of the involved side, can be taught the following "self-care" activities: ambulation around the house, getting in and out of bed and changing positions in bed, feeding and dressing themselves, getting in and out of chairs and a car, going to the toilet and attending to personal toilet, and going up and down stairs with a hand rail. With slight assistance, these patients can usually get in and out of a bathtub and with no assistance can take a shower sitting on a stool. When there is cardiac decompensation or other complications that will vent ambulation, the patient should be taught to be as pendent as possible with a wheelchair, thus relieving the fa of a great burden. The patient must be motivated to wo becoming independent, and the family and/or ward pers must discourage dependence. These goals are more accomplished when rehabilitation begins early and the pa is not permitted to enjoy being an invalid.

GYNECOLOGY & OBSTETRICS

A Simple Method of Treating Vulvovaginal (Bartholin) and Abscess. E. M. Wilder. South. M. J. 48:460-464 (1955 [Birmingham, Ala.].

Infections of the vulva may occlude the opening of the of the vulvovaginal gland of Bartholin, and an abscess form. After the infection subsides the gland continues to s and a thin-walled cyst results. A Bartholin cyst rarely symptoms; but the periodically recurring abscess causes ex pain and discomfort. The author shows that the treat recommended in textbooks are too radical and haza Furthermore, the radical excision of the gland results i of important lubrication. These women complain of dyspa and dryness of the vulva. Many have a deformed and s vulva with its deplorable consequences. The procedure des by the author and those suggested by Davies and Jacobso at the reestablishment of the ostium of the duct to supply age and permit the gland to function again. The cyst wa comes the new duct communicating with the still functi gland. In the author's technique, which is an office proc an incision about 2 cm. long is made over the cyst w abscess close to the original opening of the duct. Four silk sutures are placed from inside the cyst or abscess wall and including the skin of the vestibule and labia. An form drain is inserted in the abscess or cyst cavity. The is removed in about one week. The operation can be don mediately post partum, provided the infection is not an process. After three weeks the silk sutures are removed new patent ostium is evident. From 1948 to 1950 the a treated 18 patients, using Davies' technique, the final being excellent in all 18, of whom five had abscesses an remainder cysts. Between 1950 and the end of 1954 he tr 48 patients with acute bartholinitis and 32 with cyst by his modified method. The results were excellent in all pat although one with bilateral cyst tormation required operations on each side.

Endometrial Cancer with Positive Biopsy Not Confirme Operative Specimen. R. A. Defilippo. Rev. Asoc. méd. ar 69:5-8 (Jan.-Feb.) 1955 (In Spanish) [Buenos Aires, Argen

Conflicting results between a positive biopsy of endom cancer and negative results of the histopathological examin of the removed uterus have been explained as proof of of cancer by biopsy. A positive biopsy of endometrial ca calls for hysterectomy. The cure effected by biopsy is ve by histopathological examination of the removed uterus, w as the possibility of cure should not be relied on as an expec treatment. The practice of sending portions of the same bi to more than one pathologist may result in contradictory ings in the various sections. Positive results in a portion of biopsy prevail over negative results in the other port Hysterectomy confirms the diagnosis of cancer. The author ports three cases of endometrial cancer with such conflict results. The whole endometrium in the removed uterus observed. A small focus of granulation tissue containing plastic cells that were identifiable with those of the biopsy found in two cases. It proved to be the zone of implantat of peduncular adenocarcinomatous and carcinosarcomat polyps respectively. No cancerous lesion was found in the en metrium of the third patient. The author concludes that biopsy effects a cure of endometrial cancer by section peduncular neoplasms by the pedicle or by extirpating the wh neoplastic lesion of early noninfiltrating cancer. The histopat logical examination of the removed uterus should include t e endometrium to prevent overlooking of the basis of im- ation of polypous carcinomas or residual zones of malig- after extirpation of complete lesions of early noninfil- g neoplasms. In evaluating the cure of endometrial cancer opsy, the possibilities of loss and accidental substitution ecimens, diagnostic errors, and the removal of a malignant of transitional endometrial glandular hyperplasia should minated.

igation on the Function of the Adrenal Cortex Before ery and in the Early Puerperal Period. T. Ozbay. Zen- Gynäk. **77:**372-384 (No. 10) 1955 (In German) [Leipzig, any].

five healthy pregnant women, who had a normal delivery, cretion of adrenal cortical hormones was determined in st weeks before delivery as well as during the early puer- n. Daily urinary corticoid and 17-ketosteroid determina- were made. During the last weeks of pregnancy the oid content of the urine was about twice as high as in egnant women who had normal menstrual cycles, but im- tely after delivery the corticoid content of the urine de- d rapidly and within a short time was only 20% above f nonpregnant women. The 17-ketosteroid content of the was about 50% above normal before delivery, but during uerperium the urinary concentration of 17-ketosteroids d no increase whatsoever.

LARYNGOLOGY

gillosis of the Ear: A Report of 29 Cases. E. A. Stuart. l. M. A. J. **72:**334-337 (March 1) 1955 [Toronto, Canada].

e fact that 29 patients with otomycosis due to various s of Aspergillus were diagnosed and treated at the Royal ria Hospital in Montreal, Canada, indicates that otomy- aspergillina is more common in this region than reports is disease would suggest. Eleven of the 29 patients in this (group 1) had no history of previous ear infection, except e instance where a simple mastoidectomy had been per- d many years earlier. Five cases occurred in patients with ic eczema of the ears (group 2). Seven patients already chronic suppurative otitis media (group 3). Three cases red after the use of antibiotic powders in cavities result- om radical mastoidectomy (group 4), and three others fol- l the general use of antibiotics (group 5). Large mycelial s were removed from the auditory canal of most of the nts. Microscopic and cultural examinations of the debris made in all cases, but in 13 cases no bacteriological in- gations were made, because the diagnosis of aspergillosis o strongly suggested clinically. A light to moderate growth icrococcus (Staphylococcus) pyogenes was found in 6 of emaining 16 patients in whom bacteriological studies were . No bacteria were found in five of eight patients of group ho were bacteriologically examined, but in two of these the symptoms were severe and signs suggested otitis media. us was found in the middle ear, and the author believes that ymptoms and signs resulted from the mycotic infection. In ps 2 and 3 the unhealthy skin and moisture of eczema and nic suppuration provided a medium for the growth of the us. No further comment is made on the six cases of otic rgillosis associated with the local or general use of anti- cs. The author believes that mycological investigations of auditory canal in addition to the bacteriological examina- should be of great assistance in arriving at a proper diag- and more effective treatment in otitis externa.

oration of Hearing in Otosclerosis by Transtympanic Mobil- on of the Stapes: Preliminary Report of Fifty Cases. A. A. er. A. M. A. Arch. Otolaryng. **61:**513-534 (May) 1955 cago].

series of 50 patients with otosclerosis was treated by the stympanic method of mobilization of the stapes. The tech- e employed was that of Rosen, which was described in *A. M. A. Archives of Otolaryngology* (61:197-206 [Feb.] 1955; abstracted in THE JOURNAL **158:**235 [May 21] 1955). The patients were followed from 6 to 10 months after the transtympanic mobilization of the stapes. Forty-seven of the stapes were found to be fixed at the time of operation, and 31 were mobilized, but only 15 obtained a group A result (return of hearing to a serviceable level of 30 db. or better). Sixteen of the stapes were fractured because they were too fixed. Two stapes in patients with group A results became refixed in the fenestra ovalis after mobilization but were remobilized, with a return of hearing to the original postoperative level. Postoperative infection probably hastens the refixing of a mobile stapes. A fenestration can be successfully performed after an unsuccessful mobilization.

PATHOLOGY

Atrophic Gastritis of the Fundus in Pernicious Anemia: Biopsy Investigation. C. Debray, R. Laumonier, F. Besançon and P. Housset. Arch. mal. app. digest. **44:**28-40 (Jan.) 1955 (In French) [Paris, France].

Fifty patients with pernicious anemia were examined by gastric biopsy. The classic descriptions of the gastric lesions were confirmed by this study. No patient had a normal fundic mucosa. The lesions were spread throughout all parts of the mucosa, they were all of long standing and of an irreversible nature, and they were heterogeneous. The authors were unable to throw any light on the question of which cells secrete the intrinsic factor. Unequivocal histological criteria cannot be set up for the diagnosis of pernicious anemia from biopsy evidence, but certain signs are strongly suggestive: a greater degree of fundic atrophy than in other diseases, less cellular differentiation, and the extensiveness of the lesions. As to the question of how pernicious anemia develops, it is suggested that several conditions must be fulfilled simutaneously: the atrophic gastritis must be generalized, severe, and irreversible in order to cause significant deficiency of the intrinsic factor, and the organism's reserves of vitamin B_{12} must be totally exhausted. Although in general the lesions, though extensive, remain clinically asymptomatic for a long time, the authors found that, on careful questioning, about a third of their patients suffered from epigastric pain. When the diagnosis of pernicious anemia is easily made, gastric biopsy is not an essential test; if it is done, it is the natural complement of gastroscopy. On the other hand, in difficult cases, biopsy is indispensable.

Secondary Tumours of the Heart and Pericardium. R. B. Goudie. Brit. Heart J. **17:**183-188 (April) 1955 [London, England].

Of the 4,687 consecutive postmortem examinations performed in the Western Infirmary, Glasgow, Scotland, during the years 1940 to 1953, there were 1,270 cases of malignant disease of which 126 (10%) showed secondary tumors of the heart or pericardium. Since a special search for cardiac involvement was not made in these routine necropsies, the true incidence is likely to be higher than this. Tumors of the heart and pericardium are often clinically silent, and, even when they produce symptoms or signs, these are usually overshadowed by the effects of the primary tumor or a metastasis to another organ. In only 20 of the 127 cases in the present series was the attention of the clinician drawn to the heart, although examination of the cardiovascular system often revealed isolated or minor abnormalities (such as poor quality of heart sounds or occasional extrasystoles) which did not arouse clinical interest. Terminal circulatory failure was common. The correct diagnosis of the cardiac pathology was never made during life in the cases reviewed. The following types of clinical pictures directed the physician's attention specifically to the heart in 20 cases. Congestive cardiac failure was the presenting feature in nine cases. In seven cases there was chest pain thought to originate in the heart or pericardium. Pericardial friction was noted in six cases. Two patients had poor quality heart sounds and electrocardiographic evidence of myocardial damage. Arrhythmias commonly occurred in the group, sometimes being the only feature to direct attention to the heart. Electrocardiograms were taken in 15 cases, and all were abnormal. The history of one patient is presented, which illustrates the difficulty that may arise in the diagnosis of metastatic tumor of the heart. In this case the physician was confident that the patient had died as a result of myocardial infarction in spite of a rather atypical history and evidence that there was a coexistent bronchial carcinoma. The author shows that the postmortem incidence of secondary tumors of the heart and pericardium in this series (10%) compares with that found by several other investigators. Bronchial carcinoma is the most frequent primary tumor.

ANESTHESIA

Induced Hypotension During Anesthesia and Surgery. D. M. Little Jr. Anesthesiology **16:**320-332 (May) 1955 [Philadelphia].

The deliberate induction of arterial hypotension during anesthesia and operation to effect a diminution of blood loss has become increasingly important in the past few years, because some operations are now extremely extensive and others penetrate deeply into the vital structures of the body. Hypotension is induced either by a reduction of the total circulating blood volume or by a decrease of peripheral resistance. The author reviews 27,930 cases in which these techniques have been used and stresses the potential complications. The mortality rate was 1 in 291, and complications occurred at the rate of 1 in 31 cases. Complications and the deaths from induced hypotension are closely related to the degree and duration of hypotension. A modified technique of controlled hypotension has been evolved, which takes advantage of the fact that the level of the systolic arterial pressure that must be obtained in order to provide a relatively bloodless operative field varies tremendously among individual patients. The exact level to which the blood pressure must be lowered, therefore, cannot be foretold prior to operation: the required level can be determined only under conditions of actual operation after suitable posturing of the patient and by direct observation of the bleeding, or lack of it, in the operative field. This optimal level of systolic pressure is usually much higher than the dangerously low systolic pressures of 50 to 60 mm. Hg advocated in the past. A significant reduction in the blood loss from the surgical wound frequently is noted at pressures of 90 to 100 mm. Hg or even higher, and such pressures may represent decreases of only 10 or 20 mm. Hg from the preoperative readings. The thiophanium compound, arfonad, has been used in this modified technique because it produces an evanescent, though potent, depressor response of the arterial pressure. It is therefore possible to give the drug by continuous intravenous infusion, and in this manner to provide variable and graded fluctuations of the blood pressure and thus to achieve minute-to-minute control of both the degree and the duration of the hypotension. This controllability is of further value in that it permits the rapid termination of the hypotensive state at the end of the operation or the rapid abandonment of the technique in the face of inadvertent hemorrhage and similar surgical exigencies.

Use of a Synthetic Analgesic in Anesthetic Premedication: Possibility of Intravenous Administration and Antihistaminic Combination. G. Martinetto. Minerva anest. **21:**86-91 (April) 1955 (In Italian) [Turin, Italy].

Ketobemidone, a synthetic analgesic, was used to prepare 74 patients for general anesthesia, 68 for general mixed anesthesia, 14 for local anesthesia, and 8 for spinal anesthesia. From 7.5 to 15 mg. of the drug were given subcutaneously one hour, or intravenously 10 minutes, before the operation. Patients in whom general anesthesia was to be induced also received at the same time 0.5 mg. of atropine. Regardless of the route of administration, ketobemidone had a marked analgesic and anesthesia-potentiating action, a moderate hypometabolic and parasympathicolytic and sympathicolytic action, and a weak psychodepressing action. Side-effects were rarely observed, anesthesia was induced easily, and reawakening was normal. Sixty-one patients were given ketobemidone combined with 100 mg. of Antistine. This potentiated the preanesthetic action of the analgesic. The author concludes that subcutaneous or intravenous administration of this drug in anesthetic premedication is useful, and that there are instances in which its combination with an antihistamine may prove highly beneficial.

PHYSIOLOGY

The Role of the Pituitary and Thyroid Glands in the Phosphorus Metabolism of the Adrenal Gland During Cold Stress. D. Nicholls and R. J. Rossiter. Endocrinology **56:**547-559 (May) 1955 [Springfield, Ill.].

The phosphorus metabolism of the adrenals was studied after removal of the pituitary in rats that were placed in a cold room for three hours, and in normal rats at room temperature. It was also studied in rats receiving a daily dose of 2-thiouracil in excess of that required for a maximal histological effect on the thyroid and being exposed to cold either for three hours or eight days. In order to prevent death from exposure those exposed to cold for eight days were given a daily dose of 2.5 mcg. of thyroxine in alkaline sodium chloride solution subcutaneously, beginning at the time of the thiouracil treatment. Thyroxine was similarly administered to a group of animals not receiving thiouracil that were also exposed to cold for eight days. The effect of eight days in the cold also was studied in a group of untreated rats. In rats exposed to cold for three hours there was an increase in the incorporation of radioactive phosphorus (P^{32}) into the acid-soluble phosphorus fractions of the adrenals. This increase was abolished by removal of the pituitary. In rats similarly exposed to cold, but whose thyroid function was depressed by the administration of thiouracil, the phosphorus metabolism of the adrenals was increased to the same degree as in normal animals. The increase in the phosphorus metabolism of the adrenals observed after a sojourn of eight days i the cold was still present in the thiouracil-treated rats, but th increase was much smaller than that observed in normal animal The early response in the phosphorus metabolism of the adrena of rats exposed to cold for three hours is caused by endogeno corticotropin liberated from the pituitary. The later response rats exposed to cold for several days depends, in part at lea on the activity of the thyroid.

Comparative Effects of Pamine, Banthine, and Placebos Gastrointestinal Motility: I. Radiographic Study in Eight Ad Subjects Tested When Fasting and After Three Weeks' Admin tration of Agents; II. Radiographic Study in Eight Adult S jects Tested When Fasting and Following the Administration a Standard Meal. W. P. Chapman, S. M. Wyman, J. O. Gag and others. Gastroenterology **28:**500-518 (April) 1955 [Ba more].

Single doses of 5 and 10 mg. of methscopolamine (Pam bromide and of 50 and 100 mg. of methantheline (Banth bromide were given on a fasting stomach to eight men. E ounces of barium suspension were administered orally to t persons one hour later. Four hours after the administra of the drugs and three hours after the taking of the barium r roentgenograms of the stomach and of the intestines were m The effect of the drugs on the time of gastric evacuation an the transport of barium along the intestine in these eight was compared with that of placebos. Methscopolamine methantheline in two different single therapeutic doses ca about the same significant delay in the forward moveme barium along the intestine as compared to the findings placebos. The results were different for the time of g emptying in that only methantheline in doses of 100 mg. c a significant delay in the evacuation of barium from the sto Repeated tests following the administration of 50 mg. of me theline and 5 mg. of methscopolamine for three weeks indi that the continued use of these drugs did not modify their on gastric motility. Methantheline caused more dryness mouth than did methscopolamine or placebos, but afte drugs had been given for three weeks this side-effect had ished so that it was no more pronounced than in the meths amine and placebo tests. Of the eight men experiment seven were healthy and one had a chronic duodenal ulce results in the latter patient were not different from those remainder of the group. Clarification of the therapeutic tiveness of methantheline and methscopolamine in peptic must await long-term studies in which these drugs are co ith placebos, antacids, and other medications. In additional periments, one half hour after the administration of methaneline and methscopolamine and one half hour before the swalwing of the barium, the eight men were given a standard meal nsisting of oatmeal, two pieces of toast with two pats of tter, two servings of jelly, one glass of milk and, at the end the meal, one glass of orange juice. The movement of barium the same person following methscopolamine, and on two other casions, a placebo, and methantheline were compared. The al made no difference in the effects of the drugs on gastric acuation in either dose compared with that of the placebo. On other hand, the drugs in either dose had significantly more laying action on intestinal motility during the fasting tests in when they were given with the meal. In the meal tests thscopolamine in either dose caused more diminution in estinal motility than did the placebos while the intestinal ults with methantheline in either dose were not significantly ferent from the findings when the placebo was given. The only luence of the meal on side-effects was to eliminate the sigicantly greater incidence of dry mouth that was noted in the ts with 50 mg. of methantheline than in the tests with a plao performed under fasting conditions. The inclusion of the al in their tests leads the authors to conclude that a sounder sis has been established for the pharmacological assessment of se drugs in man.

ucagon, Hyperglycemic Glycogenolytic Pancreatic Hormone. Clément. Presse méd. **63**:746-748 (May 18) 1955 (In French) aris, France].

Glucagon is a hormone closely resembling insulin in its compoon and chemical properties. It is secreted by the alpha cells the pancreas and acts as an antagonist to insulin, which is reted by the beta cells. Separation of the two hormones, howr, is difficult, and before glucagon was isolated, its hypercemic effect was ascribed either to a paradoxical action or to presence of an impurity in insulin preparations. Glucagon oduces hyperglycemia by mobilizing the liver glucose, and the ensity of the hyperglycemic response depends on the quantity liver glycogen available. This glycogenolytic property has l to its designation by some authors as "hyperglycemic glycoolytic factor." Glucagon secretion is stimulated by hypocemia and therefore by insulin. In fact, both hormones paripate in the maintenance of the blood sugar level and an excess one leads to the reactional secretion of the other. Glucagon, inephrine, and the hypophysial somatotropic hormone all ssess the property of raising the blood sugar level, but the panatic factor is effective in the absence of the adrenals and the pophysis. The significance of these findings in their relation the production and treatment of diabetes mellitus and renal abetes has not yet been fully determined. The presence of a tain amount of glucagon in insulin does not seem to aggrate diabetes or to hinder its treatment, but experience has shown at when pure insulin is used, the doses needed are slightly aller and insulin resistance is easier to overcome. Attempts to glucagon in the treatment of glycogenic liver disease have en disappointing, but certain forms of hypoglycemia, in which alpha cells of the pancreas are aplastic or reduced in numr, may prove to be responsive to glucagon replacement therapy.

iet and Life Span. M. Silberberg and R. Silberberg. Physiol. v. 35:347-362 (April) 1955 [Washington, D. C.].

The duration of life is determined by the interaction of genetic d environmental factors, both of which influence the rates growth, development, and aging.' Environment may permit intrinsic life potential to assert itself to the fullest extent may increase the hazards to life and thus cause premature ath. Dietary influences may exert both kinds of effects by fecting the course of disease as well as the processes of growth, velopment, and aging. In a variety of lower animals, life may prolonged by restriction of food. This is associated with faraching reduction of body size, vital activities, or both to which ese species can adjust themselves. Higher species with their omplex organization, however, are, particularly during the period of growth, less adaptable to drastic food restriction than the lower animals. Moderate dietary restriction favors longevity during certain periods of life. The exact age at which restriction should be instituted in order to accomplish an optimal effect has yet to be determined. In mammals this date may coincide with the stage of development of the long bones when regressive changes begin to overcome the growth of the epiphysial cartilage. Although there is no evidence that under these conditions the absolute life span can be prolonged, the average duration of life may be increased either by prevention of disease or by retardation of age changes or both. Severe underfeeding immediately after weaning is incompatible with normal growth and development and may even result in increased mortality early in life, particularly in girls, but the mortality of surviving persons is decreased, and some survivors will live to extreme old age. This induced longevity, however, does not prove that undernutrition so drastic as to cause stunting of growth is desirable from a biological point of view. Large dietary protein or carbohydrate allowances apparently do not worsen the prospects as to longevity provided no secondary deficiencies will be created. A high level of dietary fat has, as a rule, adverse effects on the life span. Apparently somewhere between the extremes of undernourishment and dietary enrichments lie those regimens that are optimal for longevity. Ideally, these should permit a good and uniform but not necessarily fast rate of growth and development early in life, and should, in order to avoid the injurious effects of overnutrition, subsequently stay at a low level that should still be adequate to permit a person to live not only a long but, at the same time, an active and useful life. Retardation of growth as such does not seem to contribute materially to longevity just as acceleration of growth as such does not appear to contribute materially to the shortening of the life span. On the other hand there are indications that the duration of life is influenced more by conditions to which the effect on growth is incidental and which prevail also when growth has passed its most active phase. This agrees with the concept that growth and longevity are not mutually interdependent but are coordinated phenomena governed by the same metabolic principles.

INDUSTRIAL MEDICINE

Clinical, Pathogenetic, and Diagnostic Problem of Silicotuberculosis. M. Crepet and G. Pescetti. Minerva med. **46**:710-720 (March 17) 1955 (In Italian) [Turin, Italy].

In a series of 124 patients who had silicosis as the result of exposure to silica-laden dust for 5 to 40 years, 18 had stage 1 silicosis; in 8 the disease was in an intermediate phase between stage 1 and stage 2; 60 had stage 2 silicosis; and 38 had stage 3. Bacteriological, laboratory, and radiological findings indicated that the rate of the tuberculous complication in such patients increases as the silicosis progresses. Active tuberculosis was not found in any of the patients of the first two groups, but was present in 12 of those with stage 2 silicosis in whom the common clinical and radiological aspects of tuberculosis (infiltration, lobitis, and caseous adenopathy) were seen instead of the productive or ulcerofibrous features that are characteristic of silicotuberculosis. It is suggested that the term "tuberculosilicosis" rather than silicotuberculosis be used for such patients. Active tuberculosis was found in eight patients with stage 3 silicosis and was characterized by evidence of parenchymal ulcerations on the roentgenograms. In six of the eight patients the presence of tuberculosis was confirmed by the presence of tubercle bacilli in the sputum. Parenchymal ulcerations in patients with stage 3 silicosis need not always indicate a superimposed tuberculous infection. In 50% of the patients with ulcerations, these were only apparent (areas of bullous emphysema) or they were caused by such factors as abscesses or colliquation owing to ischemic necrosis. Most of the patients with stage 3 silicosis (73%) did not show signs of tuberculous or other infection. The authors conclude that the transition of silicosis from the nodular to the massive stage can take place without the superimposition of a tuberculous infection or of any other infection.

progress in the control of all communicable diseases, many of which occur much too frequently in the United States to permit any complacency.

VIRAL DISEASES

Perhaps of greatest concern at the moment is the viral diseases problem. Virology, as an integrated biological science, is less than 10 years old, and knowledge of the behavior of the ultramicroscopic viruses, both in man and his environment, is still fragmentary. The viral diseases of man, of which more than 40 are known, include such major epidemiological problems as the upper respiratory disorders typified by the "common cold," poliomyelitis, infectious hepatitis, arthropod-borne encephalitis, psittacosis, rabies, yellow fever, measles, mumps, and smallpox, and, among animals, such diseases as foot-and-mouth disease, rinderpest, distemper, and myxomatosis.

Poliomyelitis.—The problem of poliomyelitis in the United States cannot be accurately measured by the more than 36,000 cases reported in 1953 or by the 58,000 cases reported in a high epidemic year such as 1952. This baffling disease is now distributed over the entire United States, and its incidence has been increasing for more than a decade. The long crippling effects following paralytic cases, and the hysteria that accompanies an epidemic, are matters of both local and national concern. Poliomyelitis also is increasing in many other parts of the world, which suggests that we may be witnessing a world-wide pandemic, the end of which is not yet in sight.

Great strides have been made in determining the characteristics of poliomyelitis and toward the development of an effective vaccine for its prevention. This progress is encouraging and allows the control problem to be approached with increasing intelligence, but it does not justify any lessening of efforts to uncover the basic epidemiological principles that govern its occurrence and spread. This disease will continue to be an enigma until these principles are determined. Also, the complex nature of poliomyelitis presents many difficult diagnostic problems, the solution of which requires more efficient methods of laboratory diagnosis.

Viral Hepatitis.—Infectious hepatitis, another viral infection, has increased in incidence at a rapidly accelerating rate during the past few years. In 1951, a total of 44 states reported 7,349 cases, principally in local outbreaks; in 1952, after the disease had been added to the list of nationally notifiable diseases, 46 states reported a total of 17,428 cases; and, in 1953, with reports in from 47 states, the annual incidence reached 33,700 cases. For 1954 the preliminary figures show a total of 50,000 cases reported in the 48 states. The viral nature of infectious hepatitis and of related serum hepatitis was discovered only recently, and control measures have not yet been defined, although for infectious hepatitis, gamma globulin has been effective in reducing the occurrence of secondary cases among family contacts. While person-to-person spread probably accounts for a large proportion of cases of this disease, common-source outbreaks through contaminated food or water also occur. We know that serum hepatitis is transmitted by way of blood or blood products, but many aspects of the relation of serum hepatitis to infectious hepatitis are puzzling. Mechanical transmission as a means of spread of these two highly infective diseases cannot be overlooked in this day of frequent injections and blood transfusions.

Arthropod-Borne Viral Encephalitides.—The arthropod-borne viral encephalitides present a complex epidemiological picture. In addition to man, these viruses affect horses, mosquitoes, mites, birds, mice, snakes, and probably other animals. The precise role each of these species plays in the ecology of the encephalitis viruses is not known. Man appears to be only an accidental host in a complicated life cycle among other animals that are the primary hosts.

In some years, the incidence of the disease in man is characterized by a few scattered sporadic cases, while in other years, in some particular area, an outbreak of epidemic intensity will occur, involving both man and horses as well as other animals. An episode of this nature took place in the summer and fall of 1952 in the Central Valley of California, when some 800 human cases and 400 equine cases were recorded. The most recent outbreak occurred in 1954 in a county on the U. S.—Mexico border. The first case occurred in July, and by the last week of August the epidemic had reached its peak. Although only 373 cases were recorded through official reporting channels, medical personnel sent to the field during the outbreak estimate that there were probably from 800 to 1,000 cases among the population of the county. A total of nine deaths occurred during the epidemic. From a previous 10 year history of an occasional reported case of encephalitis, this disease spurted to epidemic proportions within the short space of less than two months, taxing both medical and public health facilities of the area.

In addition to our native encephalitides, there are other types, such as Russian, Japanese, and Venezuelan, which occur in various parts of the world, and it is not known what forces in nature may introduce these viruses among our insects and animals; nor are the factors known that produce proliferation of the viruses, with ensuing infections among man. Indeed, these diseases are of such complexity that many different approaches undoubtedly will be necessary to elucidate and disentangle the host-virus relationships.

Psittacosis.—Psittacosis, a viral disease that produces atypical pneumonia, has shown a marked increase in recent years. From an average of some 28 reported cases per annum from 1945 through 1951, the incidence rose to 135 and 169 in 1952 and 1953 respectively. In 1954, the annual total increased to 444 cases. The disease is present among parakeets, which recently have become a favorite among household pets, and is also present among some of our domestic flocks of fowl. A sick parakeet and a stubborn respiratory disease in a member of the household is sufficient reason for suspicion of psittacosis. Unfortunately, no immunizing agents have been developed that can be used against psittacosis in either bird or man. Its control involves cooperation of owners, producers, and distributors in treating or destroying diseased birds, as well as education of the bird-loving population.

Rabies.—Rabies is one of the frightful infections from which man has suffered since ancient times. Few deaths re reported each year, but the majority are among chil- ren 5 to 14 years of age, an age group of enormous motional appeal in any community. The administration f the long series of injections necessary to prevent rabies llowing a bite from an infected animal is a particularly isagreeable procedure and is fraught with danger. The servoir of the disease is in dogs and in various species f wild animal life. Recently the list of animals known harbor rabies was increased by the discovery of the irus in insect-eating bats. This finding indicates that the servoir of the disease may be much larger than hereto- re had been suspected and points to the necessity of rther investigations to determine all animal species at could be responsible for transmitting rabies to do- estic animals and man.

Smallpox.—Smallpox, another ancient viral infection, reported every year, but confirmed cases of the dis- se are rare. The last outbreak of any consequence in e United States occurred in New York City in 1947, hen one imported case gave rise to 11 subsequent cases nong those in close contact with this patient. Few resi- nts of that city will ever forget the consternation used by this episode, which disrupted and overtaxed e normal public health services of the city. Universal ccination may be an accepted principle, but it needs ly an outbreak of this nature to show that vaccination not universal practice.

Yellow Fever.—Yellow fever, one of the most viru- nt of the virus diseases, has been eradicated from the nited States. An indigenous case of this disease has not en reported in this country for 50 years, and recur- nce of yellow fever here in epidemic form is looked on as only a remote possibility. Nevertheless, the edes aegypti mosquito, the urban vector of yellow ver, abounds in our southern states. This, coupled with e fact that the reservoir of the virus persists in the ani- als of the Central and South American jungles from hich the disease periodically "spills over" into urban pulations of port cities, makes the chance that yellow ver may be introduced in this country one that can- ot be ignored. It justifies not only the strict enforce- ent of quarantines but also the keeping in readiness of plan for immediate eradication should the need arise.

"Common Cold."—The last of the viral diseases to be nsidered here is that complex infection known as the ommon cold" with which everyone is familiar. This lment, although considered to be one of the less severe fections, is the source of a great deal of human misery nd discomfort. It is also one that causes enormous onomic loss. Because the common cold is not a re- ortable disease, only generalizations regarding this loss an be made. If we assume, for instance, that the 60 mil- on workers in the United States lose an average of only ne day per year because of a "cold," the resultant loss the equivalent of 230,769 man-years of work, or, tated differently, a loss to our labor force of a quarter illion workers a year. Furthermore, if we assume a onservative annual wage of $2,500 per worker, the total nnual loss amounts to over 500 million dollars ($576,- 22,500).

Pneumonia and Influenza.—The history of pneu- nonia and influenza deaths in this country has been marked by periods of high incidence, although the overall trend has been downward since the great pandemic of 1918. These diseases represent a group of infections caused by both viral and bacterial agents, and, although the deaths due to pneumonia and influenza are at the lowest figure in the history of this country, the rate is still around 32 per 100,000 population, a rate that was achieved in 1949 and that in succeeding years has remained the same. Thus, these diseases rank as a major cause of death. Pneumonia is an important secondary cause of death in other pathological conditions and injuries. In 1940, the most recent year for which a national study of joint causes of death is available, it was found that for every 10 deaths for which the primary cause was pneumonia or influenza, there were 6 additional deaths in which pneumonia was a secondary cause.

BACTERIAL DISEASES

The diseases next to be considered are those caused by bacteria. These pathogenic agents, through infection of the heart, kidney, brain, and blood, play an important role in initiating degenerative diseases during the productive years of life, and much remains to be learned about the mechanisms of the infective processes. It is against these specific infections that the antibiotics have been so dramatically effective; however, with the increasing and not too discriminating use of the antibiotics, the emergence of resistant strains of pathogens in now posing problems not only to clinicians and hospitals but to the general community. Resistant strains of tubercle bacilli are now a well-known phenomenon. Resistant strains of the micrococci, considered to be the most important and common cause of bacterial infections, may be acquired from symptomless carriers. Control of these strains of bacteria, as has been pointed out by workers in this field, requires extended knowledge concerning the fundamental nature of the mechanisms involved in the mode of action of the antibiotics and of the factors involved in the development of resistant strains. Equally important is further clarification of the epidemiology of infection by both the resistant and the nonresistant strains.

Streptococcic Sore Throat and Scarlet Fever.—Streptococcic sore throat and scarlet fever cases have been reported in increasing numbers in recent years, although, like pneumonia and influenza, the long-time trend has been downward. With the advent of antibiotics, the incidence of scarlet fever and streptococcic sore throat fell steadily from its last peak of 200,539 cases in 1944 to a low of 64,494 in 1950. Since that time, there has been a continuing upward trend in the annual number of cases, reaching totals of 85,151 in 1951; 113,677 in 1952; and 132,935 in 1953. This past year (1954) nearly 145,000 cases were reported. This is the highest annual total recorded since 1945. Could the recent increase in the number of reported cases be an indication that the antibiotics, while effective as a curative, have not been effectual in preventing transmission of the disease?

It is of interest to note that less than a hundred years ago this invading Streptococcus was among the leading causes of death in children. Formerly fearful and highly fatal maladies, these infections today are considered to be mild and innocuous; nevertheless, the role that they play in subsequent valvular heart disease is of particular concern. Each year some 35,000 deaths are attributed to heart disease of rheumatic or pyrogenic origin.

Epidemic Cerebrospinal Meningitis.—The last epidemic of cerebrospinal meningitis in this country occurred between 1942 and 1947, reaching its peak in 1943-1944. During the epidemic, a total of some 56,000 cases was reported, with a mortality of 9,000 or roughly 20%. Since the 1948 low, when only 3,376 cases were reported, there has been an annual increase to a total of 5,077 cases in 1953. During the period 1948-1951, approximately 15,000 cases were reported, together with 4,000 deaths, yielding a case fatality rate in excess of 25%, which is much higher than the 5% fatality rate reported for cases of this disease occurring in the Army during World War II. The high civilian rate, when compared to the military, may be a reflection of the incidence of the disease in a different age distribution, underreporting of civilian cases, and delays in obtaining medical care and institution of proper therapy. The epidemiology of epidemic cerebrospinal meningitis has not been fully delineated. Its rise to an epidemic peak is more deliberate than that of other communicable diseases. Within an epidemic cycle there is an annual waxing and waning, with increasingly higher incidence in successive years, until the epidemic reaches its maximum. The ascent requires from two to five years, and the decline follows the same pattern.

Diarrheal Diseases.—The diarrheal diseases continue to be a public health problem of considerable magnitude. These are not nationally reportable diseases, and one can only guess the total number of cases. We know, however, that during the five years from 1947 to 1951 more than 35,000 deaths from these infections were recorded among children under 5 years of age. Epidemic diarrhea of newborn infants caused some of these deaths, but approximately 90% of them occurred among children over one month of age. These diseases are amenable to control, since most of the deaths have occurred in substandard areas where sanitation falls below the national average; however, many of the etiological agents are unknown, and the epidemiology of the known pathogens is not fully understood. Particularly in need of clarification are relationships between diarrheal diseases and parasitic infections. The key factors in sanitation that are responsible for the spread of these diseases are yet to be discovered, as is the role of familial relationships in person-to-person dissemination.

Other gastrointestinal infections of bacterial origin, bacillary dysentery, and typhoid and paratyphoid and other salmonelloses, are of varying importance today in the United States. Typhoid has been declining constantly since the turn of the century and in 1951 reached a low of 2,128 cases; however, in 1952 and 1953 the numbers of reported cases were slightly in excess of this figure. On the other hand, reports of paratyphoid and other Salmonella infections have shown a gradual increase from 712 cases in 1944 to 3,946 in 1953. Incidents involving food poisoning due to bacterial contamination occur with a frequency not warranted by our reputed high standards of hygiene and long experience with these pathogens. Outbreaks of amebiasis, an associated enteric disease caused by a protozoal agent, occur with increasing regularity. Between 3,000 and 5,000 cases of amebiasis have been reported annually since 1944. The fact that outbreaks of these various enteric diseases can and do occur, requiring immediate intensive attention for their control, indicates that there can be no letup in the attention we give to this group of infections.

Diphtheria.—The low incidence of diphtheria, with only 2,355 cases in 1953 for the nation as a whole, is not an accurate index of the importance of the disease, for outbreaks continue to occur in which the incidence rates are extremely high. The level of immunity is not known for most of our communities, and when or where an introduced case of diphtheria will result in an outbreak cannot be accurately predicted. An example of the "flaring up" of diphtheria is the outbreak in one of the counties of a western state that occurred in the early spring of 1953. This county, with a population of 42,000, had had very few cases of diphtheria, three or less per annum, in the previous 10 years. In January of 1953, a single case was reported, and it was followed in the succeeding weeks of February and March by a total of 52 cases. Thus, after a long period of quiescence, an annual attack rate of over 125 cases per 100,000 population occurred.

In November, 1954, a county on the Ohio River with a diphtheria-free history of a period of at least 10 years, experienced an unusually severe outbreak. In this county of some 9,500 inhabitants, a total of 24 cases was reported by local physicians, and an additional 11 cases were discovered by medical personnel investigating the epidemic. Four of the cases terminated fatally, and another child was left with a serious myocarditis. Preliminary findings in a survey of the immunization status of the school children in this county indicated that perhaps only a third were adequately protected against the disease.

Diphtheria is a disease of concern not only to the public health authorities who campaign the year round for immunization of preschool and school children but also to the clinician, who always must consider the possibility of the disease among his patients.

Tuberculosis and Venereal Diseases.—Tuberculosis and the venereal infections have been and are still being subjected to intensive control efforts by federal, state, and local health departments. Progress has been made in reducing both of these diseases; nevertheless, they still remain of great importance insofar as the general health of the nation is concerned. It is estimated that at present there are 1,200,000 cases of tuberculosis in this country, 400,000 of which are active and 800,000 inactive but under medical supervision. Although the number of deaths annually both here and abroad has declined at an accelerated rate in recent years, the case rate shows no similar decline. More than 100,000 newly discovered cases have been reported annually in the United States during the past 10 years. This high level of reported cases may be due to more effective and earlier case finding by health workers and may obscure an over-all decrease. We must, however, agree with the

British observers that, so long as active cases are reported in such impressive numbers, it cannot be assumed that tuberculosis is a conquered disease.

Disability and death from the venereal diseases also have been diminishing in recent years. Nevertheless, the magnitude of the current problem can be gauged by the more than 150,000 cases of syphilis and some 250,000 cases of gonorrhea that were reported for the civilian population during 1953. These are only the reported cases, and it is certain that many infections remain undetected. Practical reliable laboratory diagnostic tests are yet to be discovered. There are no known immunizing agents against either syphilis or gonorrhea, and, until such are discovered, intensive case-finding activities, education of the public, and prompt administration of therapy must continue as the best means of controlling the spread of these infections among our population.

Dermatomycoses.—The fungous diseases of the skin constitute another group of infections of immense importance in this country, not only because they impair the health and happiness of a large portion of our population but also because, under circumstances of stress, they can be disabling diseases. Dermatophytosis (athlete's foot), for example, is a widespread and harassing ailment. It is highly infectious, and its cure may require years of treatment. During World War II, 8% of all hospital admissions among the armed forces were for cutaneous disease, and dermatophytosis was second on the list. Among the civilian population, it is the athletically inclined high school and college students especially who incur a high incidence of the disease, and they are the members of our armed forces of tomorrow.

Tinea capitis, another disease in the same category, is a troublesome problem to the school, to the child, and to his parents. In the southwestern states there is a newly discovered type of epidemic tinea capitis that affects both children and adults. It is difficult to detect because the lesions are often minimal, and it is a stubborn disease to cure. It may persist for years, and untreated cases frequently result in permanent baldness.

There is no information on prevalence of fungous diseases, but undoubtedly the total number of infected persons is very high. Approximately 3 million dollars was spent in 1953 on across-the-counter packaged medicaments for dermatophytosis alone, and this does not include remedies prescribed by physicians.

COMMENT

The foregoing discussion has been concerned with some of the more important communicable disease problems of long standing. In addition, there are others demanding attention. Clinical and epidemiological studies are continually expanding our knowledge of disease entities whose etiologies previously have been obscure. Determination of the prevalence, geographical distribution, and modes of spread of these newly identified infectious diseases is a continuing problem of present and future years. With advances in methods of clinical and laboratory differentiation, cases of toxoplasmosis, leptospirosis, Q fever, and systemic fungous infections such as histoplasmosis, blastomycosis, and coccidioidomycosis are being reported in the medical literature with increasing frequency. Toxoplasmosis, a protozoal infection that infants may contract from their carrier mothers, causes mental retardation and blindness. Leptospirosis, a spirochetal disease found in many parts of the world including the United States, is carried by the rat, dog, cow, and other animals. It may be contracted in contaminated waters and may or may not be accompanied by jaundice. Q fever, a pneumonia-like infection, occurs along the Pacific Coast and in the southwestern sections of this country. The systemic fungous infections, which in their acute and chronic stages are frequently misdiagnosed as tuberculosis, are endemic in many areas of the country. Others of the ill-defined syndromes of today undoubtedly will be differentiated and traced to specific etiological agents by use of improved diagnostic methods.

Each facet of the problem of infectious diseases presents a continuing challenge. It is essential to be constantly alert to prevent the reestablishment of the dread diseases of the past; to develop control measures for those diseases, particularly viral infections, which today spread without restraint; to apply with greater effectiveness those preventive measures that are available today; and to continue to expand knowledge of diseases of obscure etiology.

It is obvious that the conquest of the communicable diseases is one of the compelling problems of our time. The principal victims of these diseases are not the older men and women who look forward to a future of quiet and uneventful pursuits; they are the young and vigorous segments of the population on whom the present and future productive power of the nation depends. The children and younger men and women must have a top priority in our health programs if we are to assure the vitality and stamina of our future adult populations.

50 Seventh St. N. E. (5).

Dangers in New Dentifrices.—Since the addition of antienzymes to the various commercial dentifrices physicians and dentists are encountering a new oral lesion. This entity has taken many bizarre and complicated forms, and its correct diagnosis necessitates inquiry as to the patient's use of antienzyme dentifrices. The symptoms have been alarming to most patients; a few developed neurotic fears, such as cancerphobia, before the correct diagnosis was established. Many people are using antienzyme dentifrices without developing any . . . symptoms or lesions. It seems, however, that persons using antienzyme dentifrices should use one commercial brand, rather than switch from one to another, because . . . changing brands seems to build up or produce a sensitivity to the antienzyme. It is possible that the antienzymes, in addition to neutralizing the enzymes necessary to bacterial growth, also neutralize some of those enzymes which are necessary to the existence of the normal oral epithelium, thus producing a condition which causes a degeneration of the surface epithelial cells. In no way do I discount any of the merits of antienzyme dentifrices, but only wish to point out a new syndrome in the array of oral conditions. Many patients using the antienzyme dentifrices have stated that when they began using them they noted pain in the tongue and mouth which gradually disappeared on continued use of the dentifrice. Some patients have noticed the oral syndrome only after changing from one brand to another. Some have been unable to tolerate any type of antienzyme dentifrice.—Lieut. Col. W. B. Simms (DC), U. S. Army, Oral Lesions Caused by Antienzyme Dentifrices, *United States Armed Forces Medical Journal,* July, 1955.

USE OF STEROID ANESTHESIA IN SURGERY

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and
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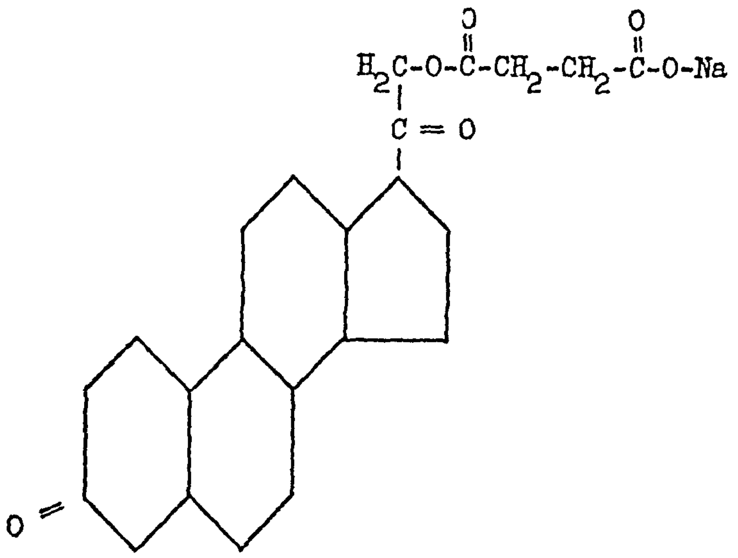
In the course of investigation of many different steroids Selye [1] noted in 1941 that certain of these substances produced varying degrees of depression and anesthesia in laboratory animals. This was only of academic interest until recently when Laubach and associates [2] studied a large number of new water-soluble steroids to determine their anesthetic activity. Of the substances tested, it was found that 21-hydroxypregnanedione sodium succinate (see figure) was the most promising. The compound was studied for its possible undesirable side-effects on animals, and its therapeutic index was established. This drug was found capable of anesthetizing laboratory animals with a wide margin of safety. In anesthetic doses it did not produce significant hormonal effects and did not cause salt retention or damage to any vital organ.[3] Gordan and associates [4] studied the effects of this compound, known as Viadril, on the cerebral metabolism of humans and reported metabolic changes identical with those of barbiturate anesthesia. These studies culminated in the successful trial of this drug, with nitrous oxide supplement, as the anesthetic for a prefrontal lobotomy. Encouraged by these findings, it was decided to give Viadril a clinical trial as a basal anesthetic for surgery at the University of California School of Medicine.



Structure of 21-hydroxypregnanedione sodium succinate (Viadril).

TECHNIQUE

Viadril is a white, crystalline substance that is soluble in water and has an alkaline reaction, the pH being 8.5 to 9.8. It has been administered in solution in either distilled water or isotonic sodium chloride solution. In either case, a 2.5% solution is freshly prepared. An intravenous drip of 5% glucose in distilled water is started in a vein of the arm. This should run freely. During administration of Viadril, the stopcock is left wide open. The Viadril solution is injected into the intravenous tubing at a point some distance from the arm, so that mixing and dilution take place in the tubing before the needle is reached. The dosage required varies with the weight, age, and physical condition of the patient as well as with the expected duration of the procedure. In the majority of our patients a total dose of 1.0 to 1.5 gm. was used (40 to 60 cc. of the 2.5% solution). The injection takes place slowly, so that the drug is washed into the vein with a large amount of solution. We have estimated that the Viadril solution does not enter the vein in a strength greater than 1.25% and usually in a much higher dilution than this. Generally, we have made our injection into the median cubital vein of the arm rather than in the leg veins, since thrombosis is more likely to occur in the latter site. Occasionally a patient will complain of pain along the course of the vein used, but this has been eliminated by reducing the injection rate. Approximately five minutes is required to give 1,500 mg., and an additional five minutes is allowed before the patient is considered to be ready for further manipulation.

Although we do not use a standard formula for preanesthetic medication, the average adult comes to the operating room after having had 50 to 75 mg. of meperidene (Demerol) hydrochloride, and scopolamine or atropine in the appropriate dosage. Thus, the patient is not heavily premedicated or drowsy upon arrival in the operating room. This premedication has not been altered for patients receiving Viadril.

COMMENT

Viadril was used in 125 patients for basal anesthesia in a variety of surgical procedures (see table) and in 3 patients for sedation during regional anesthesia. The characteristics sought in all anesthetic agents are a wide margin of safety, reversibility of action, and lack of side-effects. The anesthetic drug is then judged on its ability to produce amnesia and sleep, to abolish pain, and to obtund reflexes and relax skeletal muscles. In the lightly premedicated patient Viadril produces sleep in 5 to 10 minutes after administration of the drug has been initiated. This is a smooth, quiet process devoid of any excitement phase. In a typical case the patient is then intubated or an oropharyngeal airway is inserted and a nitrous oxide–oxygen mixture of 3:1 is administered. Meperidine hydrochloride and muscle relaxants are given as required.

From the Department of Anesthesiology of the University of California School of Medicine.

Read in the Symposium on New Agents and Methods for Analgesia and Anesthesia before the Section on Anesthesiology at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 8, 1955.

The compound used in this study was supplied as Viadril by Pfizer Laboratories, Division of Chas. Pfizer & Company, Inc., Brooklyn, N. Y.

1. Selye, H.: Studies Concerning the Correlation Between Anesthetic Potency, Hormonal Activity, and Chemical Structure Among Steroid Compounds, Anesth. & Analg. **21:** 41-47 (Jan.-Feb.) 1942; Anesthetic Effect of Steroid Hormones, Proc. Soc. Exper. Biol. & Med. **46:** 116-121 (Jan.) 1941.

2. Laubach, G. D.; P'An, S. Y., and Rudel, H.: A Steroid Anesthetic Agent, *Science*, to be published.

3. P'An, S. Y., and others: To be published.

4. Gordan, G. S.; Guadagni, N.; Picchi, J., and Adams, J. E.: Steroid Anesthesia in Man: Clinical and Cerebral Metabolic Effects, to be published.

We have tabulated our results to allow analysis of the fects of Viadril and to compare it with other basal anesetic agents. Forty-nine of the patients studied were men d 76 were women. The age groups of the 125 patients e listed below.

Age, Yr.	No.	Age, Yr.	No.
1-10	0	41-50	37
11-20	4	51-60	22
21-30	15	61-70	18
31-40	22	71-80	7

our patients, 96% required surgical procedures last- more than one hour. For these patients, a dose of 1.0 1.5 gm. of Viadril was utilized. For shorter procedures, ser doses are under study to allow the patient to re- ond promptly after completion of the surgery. The ration of anesthesia for the patients is listed below.

ration, Hr.	No.	Duration, Hr.	No.
0-1	5	5-6	11
1-2	20	6-7	12
2-3	28	7-8	2
3-4	30	8-9	1
4-5	15	9-10	1

The analgesic properties of Viadril are of interest. At our hospital, when using thiopental sodium and nitrous oxide anesthesia, we customarily limit the barbiturate to 250 to 500 mg. and then supplement it with intravenously given meperidine hydrochloride to control pain. We were therefore able to assess the analgesic potency of Viadril by noting the amount of meperidine hydrochloride necessary as a supplement. The amounts of meperidine hydrochloride used were found to be less than would have been expected had thiopental sodium been used (see table). The great individual difference in susceptibility of patients to opiates makes this property difficult to estimate accurately, but after using Viadril it is our firm clinical impression that it produces a definite analgesic state far greater than that produced by the barbiturates. Moreover, we believe that it potentiates the effect of opiates in both analgesic effect and respiratory depression.

The table shows the amounts of relaxant drugs used in our series. These amounts are considerably smaller than we customarily find necessary when employing thiopental sodium and nitrous–oxide anesthesia. An interesting finding is that, although respiratory depression is not a prominent effect of Viadril, unless considerable amounts of narcotics have also been given, most patients under its influence allow their respiration to be controlled with great ease. This has been found very advantageous in chest surgery, particularly when a quiet field is required. These properties have contributed to the diminished amounts of muscle relaxants used. We have noted that the drug when used in the dosage described above appears to have its maximum effect for a period of approximately two hours. At the end of this time it may be necessary to administer either meperidine hydrochloride or more Viadril—the latter in doses smaller than the original dose.

These various characteristics, namely, control of pain, control of reflexes, and production of relaxation, lead us to classify Viadril as a true anesthetic agent probably best compared with tribromoethanol. We have been very pleased with the lack of postoperative depression of patients in cases in which Viadril and nitrous oxide–oxygen anesthesia have been used. It is noteworthy that the majority of patients (100, or 80%) were responsive at the

Amounts of Relaxant Drugs Used with Viadril in 125 Patients

	No. of Patients		Meperidine Hydrochloride, Mg.					Curare, Mg.			
Region of Operation or Procedure	Total	Intubated	50	51-100	101-150	151-200	201-250	1-9	10-21	22-33	40.5
Intracranial	15	15	3	4	4	1	..	..	..	..	..
Intrathoracic	9	9	3	2	..	2	..	2	2	1	..
Abdominal											‡
Upper	17	16	4	6	2	..	1*	4	6	3	1
Lower pelvic	8	8	2	2	1	1	..	4	3	1	..
Kidney	4	4	1	2	..	..	..	1	1	..	..
Neck	35	23	12	8	6	..	..	..	..	..	..
Extremities	9	3	2	1	4	..	1†	1	1	..	..
Perineal	8	1	6	2	..	..	..	..	..	..	..
Back	9	5	..	4	..	..	..	..	..	..	..
Chest wall	3	..	1	1	..	..	..	..	..	..	..
Pneumoencephalogram	1	..	..	..	..	..	..	..	..	..	..
E.E.N.T.	7	7	2	3	1	..	..	..	..	..	..
Total	125	91	36	35	18	4	2	12	13	5	1

* Meperidine hydrochloride, 210 mg., tubocurarine chloride, 40.5 mg., given patient, aged 65, weight 90 kg., for gastrectomy (duration 6 hr., 50 min.).
† Meperidine hydrochloride, 235 mg., tubocurarine chloride, 6 mg., given patient, aged 33, weight 84 kg., for median neurolysis (duration 6 hr., 30 min.).
‡ One case with succinylcholine drip.

nety-one patients had an intratracheal tube inserted. is merits some discussion, as it illustrates the ability Viadril to obtund reflexes, particularly those of the arynx and the larynx. It is easily possible in most innces to intubate a patient without relaxants, once the adril sedation is effective. It is interesting to note that, the laryngeal structures are stimulated or traumatized an unsuccessful attempt at intubation, there may be a nsient laryngospasm that promptly disappears sponneously and permits respirations to resume before any rm has been done. After the intratracheal tube is in ace, there may be some attempts at coughing, but in ost cases these are short-lived and regular breathing is stored in less than a minute. The administration of the trous oxide–oxygen mixture during this time also plays part. In more resistant patients, with very active cough flexes, small doses (25 to 50 mg. administered intranously) of meperidine hydrochloride have never failed calm the patient. With regard to obtunding these rexes, it may be noted that, during thyroidectomies perrmed with Viadril and nitrous oxide–oxygen anesthesia ut without intubation, we have observed occasional oughing but never laryngospasm when the surgeon was timulating the trachea by pressure or traction.

end of the procedures. The response consisted in reacting to painful stimuli, having active reflexes, or speaking. Bouts of coughing and straining, sometimes observed during light thiopental sodium–nitrous oxide–oxygen anesthesia, which may cause the brain to herniate through the opening in the cranium during certain neurosurgical procedures, have not occurred with Viadril. This property has been useful also in two mitral valvulotomy procedures to effect smooth induction of ether anesthesia by avoiding straining, coughing, and excitement.

COMPLICATIONS

We have noted no complications after the use of Viadril except on three occasions when the administration of the drug was followed by thrombophlebitis in the injected vein. It is particularly interesting to note that in each of these cases the patient had widespread vascular disease and was receiving the anesthetic for an aortogram. It is quite possible that there was also pathology in the vein in which the Viadril was administered, which may or may not have been a contributing factor. We were also interested to note the comparison between these cases and one reported by Lundy[5] in the administration of Dolitrone (5-ethyl-6-phenyl-meta-thiazane-2,dione). Our patients also were prone, with the arms above the head, and it is quite possible that there was pooling of the blood in the vein and that this also helped to account for the thrombophlebitis. We consider it wise, however, never to use leg veins, which are notoriously more prone to thrombophlebitis, as the site of injection.

A minor complaint, noted on several occasions, has been transient pain in the arm during drug administration. However, by slowing the rate of injection this complaint has been eliminated. Some patients have complained of nausea and vomiting after operative procedures in which this drug was used. The incidence is certainly not greater than normally occurs with all surgic procedures, and it seems likely that factors other than t anesthetic are involved. Hypotension has been noted a number of cases soon after administration of Viadr but it has not been considered a serious complication. should be mentioned in passing, however, that this hyp tension is easily controlled by the use of small doses o vasopressor in those cases where the pressure dro lower than is considered safe or where it fails to retu spontaneously within a few minutes.

SUMMARY

On the basis of our experiences with the administ tion of Viadril (21-hydroxypregnanedione sodium s cinate), a new steroid for anesthesia, we have concluc that it is a true anesthetic agent, as evidenced by ability to control pain, obtund reflexes, produce rela tion, and produce sleep, all without depression of v functions. Most satisfactory results have been obtair when administering the compound together with nitr oxide (75%) and oxygen (25%). In many cases it been found necessary or advantageous to add meperid (Demerol) hydrochloride, other agents, or relaxants has also been noted that the latter drugs are all effec in dosages considerably smaller than would have b employed had the patient been receiving thiopental dium–nitrous oxide–oxygen. We believe that this c pound, Viadril, offers definite useful possibilities anesthesiology and that it merits further clinical trial. administration is reasonably safe, and it has a high th peutic index. Preliminary electrocardiographic and e troencephalographic studies, together with kidney liver function tests and hematological examinations, h been performed. These observations are being contin and results will be reported later.

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[5] Lundy, J. S.: Development of Analgesia After a Century of thesia, J. A. M. A. **157**: 1399-1403 (April 16) 1955.

A LOOK AT THE FUTURE OF INTERNAL MEDICINE

Howard P. Lewis, M.D., Portland, Ore.

The swirling progress of 20th century medicine has left us all a little breathless and has created problems that seem to multiply faster than we can solve them. Not the least of these has been the structure of our system of medical education that, one would judge, has opened its seams a bit and is beginning to take water. There is abroad in our land, indeed the whole medical world, a feeling that something should be done about something; but if I sense the situation correctly, we have not yet clearly defined that "something." This medical ferment is inescapably intertwined with the training of our future physicians. It is about this and the connotations it has for the future of internal medicine that I wish to discuss here. I can probably do little to dispel the fog in which we find ourselves afloat, but I hope I can point ou few landmarks that are worthy of thoughtful conside tion.

It has been my pleasant privilege to serve with American Board of Internal Medicine for the past years, and in this position I have had the opportunity sample and study the "national product" of our medi schools and hospitals in a unique, down-to-earth w I have been disturbed by deficiencies I have encounter the more so because they seem to stem as much or m from inadequate training as from shortcomings in candidates themselves. I do not wish to infer that have not seen many young men who are well-train and competent internists, but I do want to make cl that there have been too many who are ill prepared the simple, basic clinical skills and knowledge that I b lieve we have every reason to expect them to posse This experience has made me wonder if our clinical and skill is undergoing atrophy and if we are already

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From the Department of Medicine, University of Oregon Medical School.

Chairman's address, read before the Section on Internal Medicine at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 10, 1955.

nto a captive state where we have come to rely too much ipon the laboratory, the x-ray, and the truly enormous nstrumentation now available. Waning of our clinical ense can only make us less effective as physicians, even hough we may be better as scientific technicians. I have feeling this changing emphasis may be responsible in ood part for our growing attitude of detachment, about hich so many patients complain today.

EW APPROACH TO MEDICINE AND MEDICAL TEACHING

Not many decades ago physicians had little more than ieir clinical knowledge and skill to rely upon, and as a onsequence these were developed to a high degree. till, much of what they thought and did was tinctured eavily with empiricism, because so little was known f the basic bodily functions in health and disease. Into iis milieu came the fresh breath of the upsurgence of iochemistry, physiology, and the other basic sciences, s well as the truly phenomenal expansion of basic and inical research. The changes thus wrought in a few iort years have been startling and of incalculable bene:. Quite naturally, in their train has come the obvious ecessity for a profound reorientation of our whole aproach to medicine and medical teaching.

Our ability to probe ever deeper into the inner workgs of disease has been facilitated in a great measure y the parallel expansion of our laboratory and instruental aids. These have not only grown in number but complexity, so that now it has become impossible for ie person to be familiar with all the scientific details internal medicine, even in a modest way. Such a cirimstance has encouraged men to work in progressively irrowing channels. This subdivision has been particurly noticeable in our teaching institutions. Medical culties are more and more an aggregation of specialists, ith few men around who have the breadth of clinical aining and experience to look at medicine, and for that iatter patients, as a whole. This specialization in one ense has been profitable, because close devotion to a arrow field has enabled men to know it well enough iat they have been able to make all-important fundaiental contributions to our knowledge. With this gain as come a loss in the form of an ever-increasing splinring of the teaching of medical students, interns, and esidents, and a growing overdependence on laboratory nd technical procedures.

It is no surprise, in the light of these changes, to find iat the major weakness of our young internists is in linical examination and diagnosis. In my opinion, this cause for real concern. The capacity to make a enetrating analysis of a history and to competently perrm a thorough and complete physical examination are allmarks of an internist. A broad understanding of the linical manifestations of disease is not a luxury for a racticing internist but a necessity. How else than from ie frame of reference of a well-thought-out clinical imression can laboratory investigation be intelligently aplied, or the nuances of disease be better estimated, tudied, and explored? If we have no clear idea of vhere we are heading in a clinical problem, we are in no osition to take advantage of our advances in the basic nderstanding of disease.

One often hears the opinion expressed that to study and attempt to learn the clinical features of a wide variety of medical conditions is too much to ask of a medical student. It has been proposed that in medical schools mostly basic principles should be taught, with the idea that students will, especially in their postgraduate years, be stimulated to read and learn all they need to know. Many believe, too, that work on the wards can be depended upon to fill most of the major gaps in a student's medical armor. I am afraid these are fond hopes, not probable of realization, except in the case of unusual students. I do not in any way wish to underestimate the value and importance of work on the wards, but my experience still tells me that one of the best groundworks for a future internist is conscientious study of a good textbook of medicine. The argument that such an exercise is a waste of a student's time because "no one can learn it all" is a specious one. The fact remains that while much is forgotten, much is retained to be built upon later. A perspective of medicine is thereby acquired, a broad base upon which rests skill in history taking and analysis, an art the importance of which no one can challenge.

Somewhere along the line, training in the technique and understanding of physical diagnosis has obviously lagged. Why else would young men who appear to be intelligent and highly educable fail to palpate large livers and spleens? Why would they have difficulty seeing—let alone interpreting—obvious precordial pulsations? Why would they fumble in their attempts at simple neurological examination, or why would so many have no clear idea of what structures make up the silhouette of the heart as it is seen in the x-ray? These deficiencies I have seen, and they represent only a sample. They occur too often and are emphasized when such men may be found well stuffed with milliequivalents and versed in electrocardiography. Those who underrate the high importance of physical examination in the study of patients declare that the laboratory, the x-ray, and our instruments of precision give us highly desirable measurable findings and information, of course, not otherwise obtainable. With this I agree. However, our modern passion for measurement should not blind us to the fact, which expert clinicians can clearly support, that clinical examination has much to contribute and in many instances far more than any test or device now known.

If these observations and thoughts of mine have any merit, and again my experience compels me to believe that they have, it is time for us to take stock and determine what may need correction. I think we would find that research has so captured our enthusiasm and interest that we have come to forget and neglect our clinical corpus in the broad sense. In medical schools there is a growing tendency to look upon those whose interests lie mostly in clinical medicine as distinctly "old hat." The feeling is increasing that everyone of merit should be doing research. The excellence of a medical school as a school now appears to be judged more by the papers issuing from it than by the quality of its teachers.

Research experience as an integral part of the training of a resident has come to be regarded highly in some quarters, and it is interesting to see how many young men have included a year of research fellowship in their training. Sometimes, I suspect, this fellowship year is for the purpose of gaining a foothold in the institution where resident training is sought. I have often wondered how close these men get to their problems, particularly when they are a member of "a team." There is no doubt of the value of research in the nurture of the critical mind; however, it is not the only way to develop such an attitude, and I think we are unrealistic if we fail to recognize that only a few have real aptitude and interest in investigation. Does it really seem profitable or logical for a young man, who does not have that interest and aptitude, to spend a year where he functions intellectually not far above the level of a technician? Another disadvantage lies in the fact that many such men must, during their fellowship year, devote most of their energies to a very restricted field. This cuts down their opportunity for broad training to two years. Two years is too little time to produce a polished internist—at least an internist in the proper sense of the word—and three years is barely enough. On the other hand, for those who do have the aptitude and interest in investigation, we should provide every encouragement and opportunity with the hope that they may wish to continue in this path.

FADING CLINICIAN

In the last analysis, anything done about our training programs will be pretty much the responsibility of the teachers in our medical schools and hospitals. The change in our whole structure of medicine makes it important for us to do some realistic thinking about what kind of teachers we want and how we are to select and train them. Any decisions we make in this regard must keep in view two things: that an internist is distinguished from other specialists by his skill in general medical diagnosis and that the vast majority of internists go forth into private practice. It seems obvious then that during his student and house officer days, a budding internist must spend part of his time with ex[illegible] and broad clinicians who can develop in him the [illegible]unded approach to sick people and the clinical skills he will need. With this advantage his experience with his teachers in the subspecialties will be highly profitable, for it is they who will hone his perception and insight to a sharp edge.

The man who is fast fading from our scene is this broad clinician, and in his stead we are substituting the services of men whose main interest and strength lies in the subspecialties. The contribution they make is essential. I would never suggest that it be compromised. It is the exceptional cardiologist, to use an example, who can do justice to a case of spinal cord tumor or the gastroenterologist who can skillfully work his way through a puzzling disorder of the chest. To achieve a proper balance, we must have these broad clinicians, we must make a place for them, and we must train them.

As it is now, the young man interested in an academic life in medicine feels he must have research experience, that he is lost without a "bibliography"—the bigger the better. Research experience is valuable, but I am not convinced that facility in research necessarily goes hand in hand with skill as a teacher. The scramble to get one's name on papers has led to the reporting of no litt inconsequential or incomplete investigation and to t inordinate loading of the authorship of many papers.

If we are to do our job as I see we should do it, will have to take an almost heretical course and deci that we will train some of our apt young men to beco expert clinicians and clinical teachers and others to investigators. The clinical teacher should be free fro the constant pressure to "produce" in an investigat way and be able to devote his efforts to the study of d ease as a clinical problem and the methods by which t sum total of modern medical knowledge can best transmitted to the young men and women who are gro ing up under him.

My feelings on this subject represent those of individual whose overriding interest has long been cli ical medicine and teaching. Yet, I hope I have been ab to keep the problems I have discussed in a reasona perspective. No single plan or philosophy could ever tailored to fit the peculiar needs and characters of ea of our various medical institutions. I have not intend to even attempt to submit such a plan. I have tried to e press an opinion that I hope may be useful, if for more than a point of view, to those of us who have interest in and responsibility for the future of inter medicine.

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Radiation from Nuclear Power Development.—The large-sc development of nuclear power from uranium fission will n essarily produce large amounts of radioactive waste having pr erties identical with those produced in nuclear explosions. T radiations are, however, mainly confined to the nuclear react which are the source of heat for nuclear power stations and the chemical plants where the radioactive wastes are extract from the spent uranium fuel. The radiation in the vicinity the nuclear power units can be kept below the internationa agreed safe levels without difficulty by the use of suitable shiel ing. The average radiation dose received by Harwell worke is 0.25 r per annum. This is one-sixtieth only of the level agree internationally as permissible for the radiologically employe workers. . . . The public health problems are thus largely tran ferred to the chemical processing plants. The radioactive was products include radioactive gases such as radiocrypton a xenon; these are at present allowed to escape from the proces ing plants in conformity with safety regulations so that no har can be caused to the neighborhood. It is likely that in the futu they will be bottled and turned to useful purposes. The emissio of gaseous wastes will not increase to any significant extent we develop the atomic power program. The radioactive soli wastes divide into three groups, only one of which presents serious problem. The first group contains those isotopes whic are only slightly radioactive; these are comparable to the natura radioactive elements of the earth's crust and dispersal is a satisfactory method of dealing with this group. The second group comprises the great majority of the radio-elements produced in fission and these decay fairly rapidly. Storage of these materials, for a period of, say, ten years would reduce the activity to a level at which dispersal would be practicable and completely safe. The third group is the one which presents difficulties. It consists essentially of two elements, strontium and caesium. Each of these has an isotope which decays moderately slowly so that dispersal would only be possible after an unreasonably long storage period (hundreds of years). These two isotopes are finding increasing use in industry and medicine.—J. Cockcroft, Biological Effects of Nuclear Explosions, *Pharmaceutical Journal*, May 14, 1955.

INVASIVE CARCINOMA OF THE CERVIX IN YOUNG WOMEN

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and
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Invasive carcinoma of the uterine cervix in young women presents a problem that has certain facets of diagnosis and selection of treatment not associated with the condition in the older age groups. The clinical impression of increased virulence of the condition in the younger age group is widespread; yet at the same time, the physician is often less "cancer-suspicious" in evaluating the gynecologic complaints of young women than of older women. Since carcinoma of the cervix is a relatively uncommon condition in young women, the treatment has not always been as standardized as in the older age group. Undoubtedly, in some instances, treatment has been curtailed because of the emotional reaction of the physician and patient to the after-effects of a radiation or surgical menopause in a young woman.

There is also a probability that with more adequate and widespread screening techniques, the incidence of diagnosis of carcinoma in situ will continue to increase. Unfortunately, these techniques are not often applied to girls in their teens, so that the relative incidence of invasive carcinoma of the cervix in the younger age group will increase as the incidence of invasive carcinoma of the cervix in the older age group may decrease. For these reasons it was felt to be worthwhile to review this group of cases of invasive carcinoma of the cervix in young women. A total of 1,451 patients with carcinoma of the cervix were seen at the Mayo Clinic from Jan. 1, 1940, through Dec. 31, 1949. Of these, 169 (11.6%) were 35 years of age or younger and had invasive carcinoma. Limitation of the group at age 35 years was made because (1) the normal reproductive processes in women show little tendency to wane prior to this age and (2) the incidence of invasive carcinoma tends to rise rather precipitately after this age, so that the average age of patients with invasive carcinoma of the cervix is about 49 years.[1]

TABLE 1.—*Age Distribution of Young Women with Invasive Carcinoma of the Cervix*

	No. of Cases, by Age, Yr.		
	20-25	26-30	31-35
Squamous cell epithelioma			
Stage 1	2	6	14
Stage 2	5	7	34
Stage 3	2	7	32
Stage 4	1	1	13
Other malignant lesions	2	3	6
Modified	1	9	24
Total	13	33	123

AGE DISTRIBUTION

The age distribution of the 169 patients is shown in table 1. There is no essential difference in the incidence of early invasive carcinoma (stages 1 and 2) within the age group 26 through 30 years (39.3%) and the age group 31 through 35 years (39.0%). In the age group 20 through 25 years, 53.8% fell in this category, but the group consisted of only 13 cases. There were no patients younger than 20 years in this decade of observation. It is also obvious that by age 31 years, the incidence of invasive carcinoma is rising rapidly.

SYMPTOMATOLOGY

The tabulation shows the primary symptoms of this group of patients. The most prominent symptom by far is intermenstrual bleeding, either traumatic (postcoital) or nontraumatic. Minor abnormalities in menstruation comprise a significant group, as does leukorrhea. As is well known, all of these symptoms are not infrequent in young women, and many of the histories showed a tragic delay on the part of the physician when these symptoms were treated with douches, suppositories, hormones, and cautery prior to a diagnosis by means of a thorough pelvic examination and evaluation of the cervix by cytological smear and biopsy. In only eight cases did diagnosis occur as the result of a complete routine physical examination. All of these were classified as stage 1, and the patients have survived five years. Admittedly, many of the patients tended to minimize their symptoms. The group in which pain was the primary complaint was composed, almost without exception, of the far-advanced cases in which there were also bleeding and a foul leukorrhea.

Primary Symptoms	No. of Cases
Leukorrhea	30
Intermenstrual bleeding	91
Menometrorrhagia	14
Menorrhagia	2
Irregular menses	7
Pain	17
Routine examination (no symptoms)	8
Total	169

The recent emphasis on marital and childbirth trauma as a factor in the etiology of carcinoma of the cervix is not too well substantiated by this group of cases.[2] The tabulation given below shows that a large number of patients, 34 (20.1%) of 169 patients, had never been pregnant. Of the remainder, 135 patients, all had had one or more pregnancies, the greatest number being a total of seven. The tabulation shows the number of marriages per patient. Sixteen of the 169 patients had mul-

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Read before the Section on Obstetrics and Gynecology at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 10, 1955.

[1] Bowing, H. H., and Fricke, R. E.: Late Results of Radium Therapy for Carcinoma of the Uterine Cervix, J. A. M. A. **137**: 935-941 (July 10) 1948.

[2] Gagnon, F.: Contribution to the Study of the Etiology and Prevention of Cancer of the Cervix of the Uterus, Am. J. Obst. & Gynec. **60**: 516-522 (Sept.) 1950.

at the clinic for additional treatment, and one of these survived more than five years. The relative survival rate of the entire group was 53.5%.

SUMMARY AND CONCLUSIONS

In 169 cases of invasive carcinoma it is apparent that there has been no essential difference noted in the end-results of treatment between the women under the age of 35 years and those over the age of 35 years.[5] A relative five year survival rate of 53.5% was obtained. There was no special predilection noted for more anaplastic tumors in the younger age group under consideration. This is in agreement with the observations of Kahanpää [6] and of Lindell.[7] As many authors have indicated, there is a grievous delay in diagnosis on the part of the physician through misinterpretation of relatively minor symptoms. This is the area in which it would seem the greatest advance could be made. Nothing can replace an adequate pelvic examination, visualization of the cervix and proper cervical biopsy in the armamentarium of the gynecologist. Nor, once the diagnosis has been made, should there be any hesitation to pursue complete tre ment of the lesion because of the age of the patient a the effect of a surgical or radiation menopause. It our impression from this study that carcinoma of t cervix in young women is as malignant as in the over-age group but no more so. For reasons previously stat *the role of surgery is considered to be somewhat grea in the early stages of invasive carcinoma of the cervix young women than in the older age group.* Howev the same patients who are amenable to surgery yi excellent results when treated by irradiation therap so that it is difficult to assess this phase of the proble It is not possible to evaluate the question statistica from this group of cases, and it must remain an individ problem for each patient under consideration. The tin honored precepts of early diagnosis, adequate treatme and careful post-treatment follow-up are nowhere m necessary than in the younger age group.

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[6] Kahanpää, V.: Carcinoma of Cervix Uteri in Young Women, obst. et gynec. scandinav. 26:379-390, 1946.

[7] Lindell, A.: Carcinoma of the Uterine Cervix: Incidence and fluence of Age: Statistical Study, Acta radiol., supp. 92, pp. 1-102, 195

RADIATION DANGERS IN DIAGNOSTIC RADIOLOGY

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Recently there have been warnings of the danger to the population as a whole resulting from the increased use of radioactive materials and of x-ray in diagnosis. However, physicians in general are not yet well enough informed as to the potential harm. In the words of the Handbook on X-ray Protection of the National Bureau Standards,[1] "with the increasing use of radiation and terials emitting radiation, it is necessary for the medical profession to exercise great caution and restraint in the use of X-rays for diagnosis and treatment of non-malignant disease. Current methods and practices should be reviewed to see whether the same result could be obtained with less radiation."

To illustrate the extensive use of ionizing radiation in the United States, it was recently stated by Moeller and associates [2] of the U. S. Public Health Service that there are 126,000 x-ray units for diagnosis and therapy in this country—50,000 used by physicians and hospitals, 65,000 by dentists, and 11,000 by osteopaths and chiropractors. In industry, there are 2,000 radiographic units. Some 30,000 salespeople use fluoroscopes in shoe-fitting, and the number of customers who receive some radiation in this way can only be guessed at. Radium can be bought on the open market by individuals unacquainted with its dangers. It is used in the manufacture of thickness gauges and static eliminators. In research activities, radiation is emitted in the use of cyclotro linear accelerators, electron microscopes, and x-ray d fraction apparatus. In addition, radioisotopes are d tributed by the Atomic Energy Commission to ma medical centers, which have to protect the operating p sonnel and safely dispose of the wastes. To these ty of occupational exposure may be added uranium mini and milling. In addition to this incomplete list is an u avoidable source—cosmic radiation—to which the h man race has always been exposed. It has been es mated [2] that an individual receives up to 9 r from t latter source in a lifetime of 70 years.

In thinking of radiation damage, there has traditio ally been a concern over the danger to radiologis and x-ray technicians, and attention has been conce trated on rather gross, easily recognizable condition such as leukemia, the incidence of which in physicia is twice as high as in the population as a whole and radiologists nine times as high (March [3] and Hensha and Hawkins [4]). In the skin, the type of damage thoug of is radiation-induced carcinoma, which has afflict some pioneer radiologists in their declining years as a r sult of early fluoroscopy without safeguards. Gonad injury has been thought of in terms of sterility or ear interruption of pregnancy. The purpose of this paper i to stress the harm that may result from small doses o radiation, delivered incidentally to fluoroscopy an radiographs made for diagnosis. These doses have bee frequently ignored, even by some radiologists, as bein of no consequence. The reason for this is that the effect are not visible. Relatively small doses of radiation hav a cumulative effect on the germ plasm and cause an in creased rate of mutations. These are generally harmfu genetically.

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Mr. Wallace Bergeron, Chief Technician, X-Ray Therapy Department, Veterans Administration Hospital, Hines, Ill., made the radiation output measurements.

[1] Medical X-Ray Protection up to Two Million Volts, *Handbook 41, U. S. Department of Commerce*, National Bureau of Standards, 1949.

[2] Moeller, D. W.; Terrill, J. G., and Ingraham, S. C., II: Radiation Exposure in the United States, Pub. Health Rep. 68:57-65 (Jan.) 1953.

[3] March, cited by Stone, R. S.: Concept of Maximum Permissible Exposure: Carman Lecture, Radiology 58:639-660 (May) 1952.

[4] Henshaw and Hawkins, cited by Stone.[3]

That this danger appears to many in the medical profession to be exaggerated is due to an inadequate appreciation of the implications of H. J. Muller's work on the Drosophila larva. This Nobel-prize-winning research[5] proved that even very small doses of x-ray had a harmful genetic effect, by increasing the mutation rate. In a recent symposium[6] on radiological safety, Muller said that if a total (cumulative) dose of 80 r were given to the gonads before conception, the spontaneous rate of mutations in persons would be doubled; and a doubled rate of mutations for the population as a whole would be harmful to the germ plasm, if it went on generation after generation. It may be said, parenthetically, that a healthy germ plasm, of which this generation is the present custodian, is our most precious resource, one that we have a responsibility to pass on undamaged. Provisionally, Muller says, a total gonadal dose of 20 r (which would produce a 25% increase in the mutation rate) should be considered as approaching the danger level for the species. It is stressed, in Muller's review,[6] that this dosage is a per capita average ceiling, dangerous for the species to exceed. Some individuals could receive much more (risking somatic damage or sterility), if the others had a low enough dose to keep the average down to 20 r. It is sometimes asked whether experimental results with fruit flies are applicable to man. Russell[7] recently approached an answer to this question, by showing in extensive experiments in mice that radiation produced mutations in them 5 to 10 times as often as in Drosophila. It may be, therefore, that our estimate of induced mutations in man, based on Drosophila results, are too low, rather than too high. Meanwhile, prudence calls for action on the existing data obtained from lower forms.

TABLE 1.—*Effect of Filters on Output in Radiography,* in Roentgens*

	Lumbosacral Spine				Pyelogram	
Added Filters	Antero-posterior	Lateral	Lateral Spot	Total Per Examination	Single Film	4-Film
None	6.7	20.8	40.2	67.7	6.0	24.0
1 mm. Al	4.2	16.4	21.5	42.1	...	....
2 mm. Al	2.2	8.8	14.0	25.0	1.7	6.8

* Output measured on skin in center of x-ray beam.

TABLE 2.—*Radiation Received on Gonads in Radiography,* in Roentgens*

	Lumbosacral Spine			Pyelogram	
Added Filter	Antero-posterior	Lateral	Total	Single Film	4-Film
None	4.5	2.0	6.5	1.6	6.4
1 mm. Al	...	...	...	0.7	2.8
2 mm. Al	1.0	0.7	1.7	0.3	1.2

* Output measured on anterior surface of scrotum.

That unduly large amounts of radiation have frequently resulted from diagnostic procedures was shown by Bell.[8] On testing his fluoroscope, as used clinically, the output varied from 25 to 40 r per minute. In individual fluoroscopic examinations of the chest, the output varied from 33 to 134 r per fluoroscopy. In fluoroscopy of the gastrointestinal tract, 148 to 396 r were the actual measured doses in single examinations (some of these lasted as long as 12 minutes). With a new machine, and increased tube-table distance, his x-ray output was reduced by one-half. More recently, Sonnenblick[9] studied 117 fluoroscopes used mainly by pediatricians. Their output, as used by the physicians, varied from 2 to 118 r per minute, with 20% of them exceeding 30 r per minute. All the physicians he questioned were ignorant of the x-ray output of their machines. At Hines Hospital, over a period of five years, measurements have been made of the radiation output of the fluoroscopes and the radiographic machines under clinical conditions. The Victoreen r-meter, an ionization chamber commonly used in checking x-ray therapy machines, was employed.

TABLE 3.—*Differences in Output of Different Fluoroscopes, Roentgens per Minute (No Filter Used)*

Test No.	Fluoroscope 1	Fluoroscope 2	Fluoroscope 3
1	16.0	24.0	5.4
2	17.0	24.0	5.2
3	17.0	24.0	7.2
Average	16.7	24.0	5.9

MEASUREMENTS

In this place, I shall consider mainly the radiographic examinations that, by their location, are most likely to affect the gonads. These are the lumbosacral spine and the urinary tract. The measurements originally made, several years ago, on a patient who had a lumbosacral spine x-ray and a pyelogram are shown in table 1. These measurements were made by placing the Victoreen r-meter in the center of the x-ray beam, on the surface of the skin nearest the x-ray tube. (At that time no added filter was used.) The radiographic factors are omitted here. Slight differences in output were seen in different patients because of variations in exposure factors.

In an initial effort to reduce the amount of radiation in diagnostic x-ray work, a filter that consisted of 1 mm. Al was added to the x-ray tube. Later, another 1 mm. Al was added in order to make a total of 2 mm., and the measurements were repeated (table 1). The fluoroscopes were then measured as to output. The dose (in air) was obtained by placing the r-meter on the fluoroscopic table for one minute, in the position where the patient's back usually is. Results originally obtained (table 3) show the differing outputs in different machines, using the same number of kilovolts and milliamperes. The effect of adding different amounts of filtration in one fluoroscope is seen in the tabulation. As a result of such surveys as these, filtration of 3 mm. Al was added to each of the fluoroscopes in the x-ray department-

Added Filter, Mm. Al	Output, r/Min.
0	12.0
½	8.8
1	6.4
2	4.0
3	2.8

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[5] Muller, H. J.: Artificial Transmutation of the Gene, Science **66**: 84-87 (July 22) 1927.

[6] Muller, H. J.: The Manner of Dependence of the Permissible Dose of Radiation on the Amount of Genetic Damage, Acta radiol. **41**: 5-20 (Jan.) 1954.

[7] Russell, cited by Muller.[6]

[8] Bell, A. L. L.: X-Ray Therapy in Fluoroscopy, Radiology **40**: 139-144 (Feb.) 1943.

[9] Sonnenblick, B. P.: X-Ray Exposure in Routine Diagnostic Practice: Survey of 117 Fluoroscopes, abstracted, Genetics **37**: 627, 1952.

ment, as well as those in use on the medical and surgical wards. Filtration of 2 mm. Al was added to each radiographic machine, including the mobile units.

Another possible approach to the problem of protecting the gonads in radiographic examinations is to place a protective covering over them. Magnusson[10] described a hinged metallic cup made to enclose the scrotum, for use when neighboring parts are x-rayed. A simpler expedient, which I have used, is to place a strip of lead-rubber composition over the pubic region. The lead-rubber is available in all x-ray departments, being used for outlining portals in x-ray therapy, and it has a protective value that is equal to 1.5 mm. Pb. It is flexible and can easily be cut to a convenient size. It can be sewed in a compression-band that will remain in place even when the table is made upright. When a pyelogram and a lumbar spine x-ray were made with the r-meter placed over the scrotum and under the lead-rubber strip, no reading was obtained on the large-scale ionization chamber (less than 0.1 r) each time. The measurements obtained in certain types of examinations, under the present conditions, with full added filtration, are given in table 4. These are obtained on the skin in the center of the x-ray beam.

TABLE 4.—*Radiation Output in Certain X-Ray Examinations (2 Mm. Al Filter)*

Examination	Output, r	No. of Films	Fluoroscopy
Gastrointestinal series..............	13.7 (total)	5 films, 6 spots	Yes
Barium enema..........................	4.9 (total)	2 films, 2 spots	Yes
Gallbladder series....................	6.4 (total)	5	No
Pelvis	1.3	1	No
Chest, posteroanterior..............	0.031	1	No
Chest, lateral........................	0.4	1	No

COMMENT

Physicians must remember that there is a specific type of radiation hazard—that of damage to the patient's gonads resulting from the doses received in diagnostic x-ray procedures. This is sometimes ignored because the effects are not visible during the physician's lifetime. Therefore, those who may suffer as a result are the descendents of his patients, possibly several generations removed. These people, bearing radiation-induced defects, will of course be unaware of the cause of their troubles, nor would it do them any good if they did know. However, physicians have a responsibility to try to prevent this problem, as well as those lethal chromosomal mutations, the result of which is an interrupted pregnancy rather than a congenitally deformed individual. In view of these considerations, the results obtained by the use of ionization chambers during radiography are of importance. In some cases there are repeated roentgen examinations of the urinary tract, lumbar spine, gastrointestinal tract, hip, and pelvis, and there is danger of gonadal injury. To think of gonad injury only in terms of sterility is an error shared by n a few physicians.

What measures are available for controlling the da ger discussed here? First, measures to decrease the r diation received by the patient, and especially his gonad in necessary x-ray diagnostic procedures. Second, elin nation of procedures that involve radiation, when po sible. To decrease the radiation received by the patier a simple, inexpensive method is at hand. It is the inse tion of adequate filtration in fluoroscopes and x-ray m chines. A filter that consists of 3 mm. Al is effecti for fluoroscopes. This will reduce the radiation about a quarter of that obtained when no filter is use Another simple measure is careful regulation of t fluoroscope to the lowest setting that will serve. Prop accommodation of the eyes before beginning fluorosco permits a lower setting than would be used without th The fluoroscope should be set at 3 ma., as higher cu rents add nothing except radiation. Russell Morgan advocates certain safeguards in addition to filters. I favors the use of an attachment that shuts off the curre (until it is reset) when the fluoroscope has been us for five minutes. He also stresses the value of restricti the fluoroscopic beam to less than 8 by 10 in., in ord to limit both the direct and the scattered radiation.

In radiography, Trout and his colleagues[12] show that a filter of 2 mm. Al reduces the dose of radiation 80% at 50 kv. and reduces it by 70% at 100 k (most of the radiographic work at this hospital is at vo ages within this range). Tables 1 and 2 show the ve substantial decrease in output obtained at Hines Ho pital when a filter consisting of 2 mm. Al was inserted all the radiographic machines about five years ago. It interesting to note that no adjustment of the x-ray tec nical factors is necessary when the filter is inserted, it absorbs radiation that would not affect the x-ray fil in any helpful way.

Another simple measure that can be used is the pla ing of a lead-rubber strip over the pubic region wh nearby parts are being x-rayed. This is applicable on to male patients, of course. To mask the ovaries wi lead would interfere with the visualization of part of t pelvis and urinary tract on the film. There is also an a ministrative aspect to its use. This device would have be used consistently, for its omission might be inte preted by the patient as the oversight of a necessary pr tection.

The avoidance of unnecessary procedures that i volve radiation is a matter that concerns primarily th physician who is not a radiologist. He is in a key positio in making the decision of whether to obtain an x-ray Radiologists who are asked to make an x-ray examina tion are understandably reluctant to decline on th ground of possible excessive radiation if the referrin physician deems the x-rays necessary. Practitioner generally should understand the hazards. They shoul stop and ask themselves whether there is any other wa of reaching a diagnosis and whether the prospective gai from the examination warrants the risk. Radiation therapy is often recommended not only for malignant disease

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10. Magnusson, W.: Device for Protection of Testicle in Roentgen Examinations of Adjacent Organs and Bones, Acta radiol. **37**: 288-290 (March-April) 1952.

11. Morgan, R. H.: Protection from Roentgen Rays, Am. J. M. Sc. **226**: 578-586 (Nov.) 1953.

12. Trout, E. D.; Kelley, J. P., and Cathy, G. A.: Use of Filters to Control Radiation Exposure to Patient in Diagnostic Roentgenology, Am. J. Roentgenol. **67**: 946-963 (June) 1952.

but also for benign conditions. The physician should seriously consider, when a benign disease is present, whether some other therapy besides x-ray or radioactive substance is not available and equally effective.

SUMMARY

The geneticist's concept of "maximum permissible exposure" should alert us to the long-range danger for individuals and the population as a whole from relatively small doses of radiation resulting from fluoroscopy and radiography. Many fluoroscopes and radiographic machines are used by medical personnel who are completely unaware of their radiation output. Measurement of output is easily done. The simple measure of inserting aluminum filters in the radiographic and fluoroscopic tubeholder (2 mm. for the former, 3 mm. for the latter) reduces the radiation considerably, without affecting the film or the brightness of the screen. Radiologists and other physicians should think about possible danger to the patient from too many radiographic examinations. Alternatives to radiation therapy should be considered, especially in benign conditions.

DIAGNOSIS OF INFRAPULMONARY PLEURAL EFFUSION

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Discussion of infrapulmonary pleural effusion can be found in radiological literature and literature on the chest but has been completely omitted in general medical publications. Consequently, this peculiar type of pleural fluid collection frequently exists unrecognized or misdiagnosed, for it produces the illusion of an elevated diaphragm. It is, of course, necessary to distinguish pleural effusion from diaphragmatic elevation, because the underlying causes of the two abnormalities, which may be entirely different, must be determined before proper therapeutic measures can be undertaken. The differentiation may not be made by diagnostic thoracentesis, for liquid in the infrapulmonary space may not be accessible to the aspirating needle by the ordinary tapping procedure. The diagnosis can be established specifically by simple roentgenographic methods, but these procedures are not performed routinely; before appropriate roentgen examinations are recommended, infrapulmonary effusion must be suspected. It is necessary therefore that all doctors who have the opportunity to observe chest roentgenograms be aware of this entity, suspicious of its existence, and acquainted with the methods and criteria of establishing a precise diagnosis.

Infrapulmonary effusion may be defined as the collection of any liquid or fluid in the pleural space beneath the lung and above the diaphragm. In a review of the literature,[1] only 62 reported cases of subpulmonic effusions resembling an elevated diaphragm were found. Infrapulmonary effusion has been described as "atypical," "uncommon," and "rare." In my experience, it is atypical only in the sense that the accepted roentgen features of pleural effusion are absent: It is neither rare nor uncommon and is, indeed, encountered frequently. Perhaps the incidence of infrapulmonary effusion that I have observed is partially related to the numerous cases of traumatic hemothorax seen in this hospital, for blood in the pleural cavity appears to have a particular propensity toward subpulmonic collections; however, all varieties of liquid, including blood, chyle, serous effusions, pus, and other forms of transudates and exudates, have been observed as infrapulmonary effusions. It becomes apparent that the accumulation of an effusion in the supradiaphragmatic pleural space is largely independent of the composition of the fluid. Korol and Scott[2] have shown that subpulmonic liquid may be capped by a "veiled air bubble"; however, this gaseous capping is not a necessary, or even a frequent, component of infrapulmonary effusion.

Twenty-four cases, obtained from the index files of the department of radiology for an eight month period in 1954, were reviewed for the preparation of this paper. These cases were selected with some discrimination, and several other cases in which there was infrapulmonary effusion in association with the obvious features of pleural effusion were eliminated. More examples of this entity were given routine interpretations and not indexed and are thus lost to further study. Consequently, these 24 patients are not intended to represent the actual incidence of infrapulmonary pleural effusion, for this abnormality is seen with even greater regularity than the number of cases reviewed would indicate. The underlying disease process in these 24 cases was as follows: pulmonary infarction, 2 cases; trauma (hemothorax), 6 cases; acute rheumatic heart disease, 2 cases; Hodgkin's disease, 2 cases; empyema (with subphrenic abscess), one case; basilar pleurisy (complicating acute perforation of duodenal ulcer), one case; breast carcinoma with pleural metastases, one case; bronchogenic carcinoma, one case; chronic glomerulonephritis (nephrotic stage), one case; arteriosclerotic and/or hypertensive heart disease with failure, 5 cases; sicklemia in crisis, one case; and dissecting aneurysm of the aorta, one case. No attempt is

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From the departments of radiology, Southwestern Medical School of the University of Texas and Parkland Hospital.

[1] (*a*) Cincotti, J. J.; Allison, S. T., and Nilsson, J. M.: Pleural Effusion Simulating Elevated Diaphragm, Am. Rev. Tuberc. **58**: 554 (Nov.) 1948. (*b*) Friedman, R. L.: Infrapulmonary Pleural Effusions, Am. J. Roentgenol. **71**: 613 (April) 1954. (c) Hessen, I.: Roentgen Examination of Pleural Fluid: Study of Localization of Free Effusions, Potentialities of Diagnosing Minimal Quantities of Fluid and Its Existence Under Physiological Conditions, Acta radiol., supp. 86, pp. 1-80, 1951. (*d*) Jones, D. B.: Basal Pleural Fluid Accumulations Resembling Elevated Diaphragm, Radiology **50**: 227 (Feb.) 1948. (*e*) Katz, S., and Reed, H. R.: Unusual Pleural Effusions, ibid. **45**: 147 (Aug.) 1945. (*f*) Parsonnet, A. E.; Klosk, E., and Bernstein, A.: Pleural Transudates: Unusual Roentgenological Configuration Associated with Congestive Failure, Am. Rev. Tuberc. **53**: 599 (June) 1946. (*g*) Rigler, L. G.: Atypical Distribution of Pleural Effusions, Radiology **26**: 543 (May) 1936. (*h*) Rothstein, E., and Landis, F. B.: Infrapulmonary Pleural Effusion Simulating Elevation of Diaphragm, Am. J. Med. **8**: 46 (Jan.) 1950. (*i*) Taguchi, J. T., and Dressler, S.: Infrapulmonary Effusion Masquerading as Elevated Diaphragm, Radiology **50**: 223 (Feb.) 1948. (*j*) Yater, W. M., and Rodis, I.: Unusual Case of Pleural Effusion Simulating Elevation of Diaphragm, Am. J. Roentgenol. **29**: 813 (June) 1933.

[2] Korol, E., and Scott, H. A.: Veiled Air Bubble in Hydropneumothorax, Am. J. Roentgenol. **33**: 777 (June) 1935.

made in this paper to present the films for each case, for they are, in many respects, repetitious. Only those films that illustrate variations of diagnostic importance are presented.

ETIOLOGY AND MECHANISM

Accumulations of effusions in the supradiaphragmatic pleural space may be manifestations of any disease process that results in transudation, exudation, or hemorrhage into the pleural cavity; however, the mechanism of the confinement of effusions in the subpulmonic space is not known. Certainly, loculation is not a feasible explanation, for fluid in the infrapulmonary pleural space may move freely throughout the pleural cavity. Also, confinement of effusions is seen in acute cases (traumatic hemothorax) in which there is no antecedent history or evidence of pleural adhesions and where loculations cannot be presumed. Many factors have been proposed to explain the collection of fluid beneath the lung. Most of the factors that influence the distribution of pleural effusions have been described originally by Rigler[1g] and Hessen,[1c] and it is unnecessary to repeat their discussions. Aside from the factors listed by these authorities, however, it would appear to me that there are two basic principles in the mechanism of infrapulmonary fluid collection. It is reasonable to suggest that the base of the lung is inherently more elastic than the remaining portions and is therefore more mobile. This is illustrated by the commonly recognized fact that a restriction of the lung base produces considerably more encroachment upon the vital capacity than do restrictions in the upper portions of the lung. The relatively small impairment of pulmonary function that results from thoracoplasty is an illustration of this. Furthermore, thoracic surgeons recommend maintaining a patient in the Trendelenburg position in cases of pleurisy or hemothorax, so that any pleural scarring that results will form over the apex rather than the base and a better functional result will be obtained. Another clinical impression that would support the theory of greater mobility of the base of the lung may be derived from the experience encountered with the patients whose cases were reviewed for this paper. Several of the patients who had, solely and entirely, infrapulmonary fluid collections demonstrated a diminished vital capacity and shortness of breath that were relieved with thoracentesis. In one patient, the amount of liquid was only 700 cc., but the respiratory function was completely restored to normal after aspiration of this relatively small volume from the infrapulmonary space.

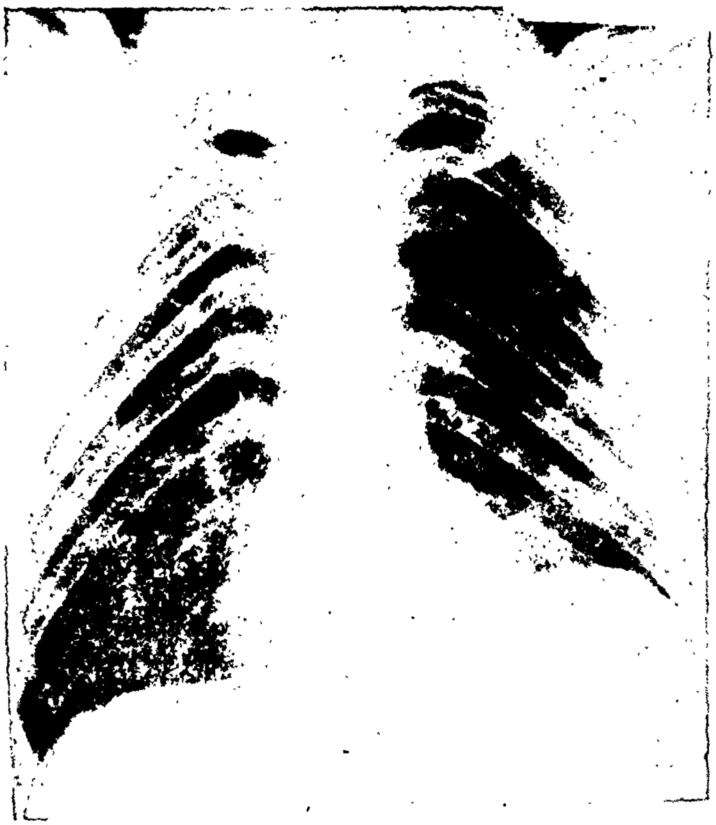

Fig. 1.—Typical infrapulmonary effusion on left resembling hemidiaphragmatic elevation. Note absence of usual signs of pleural effusion. Diagnosis was confirmed by multipositioned roentgenograms, similar to those shown in figure 6.

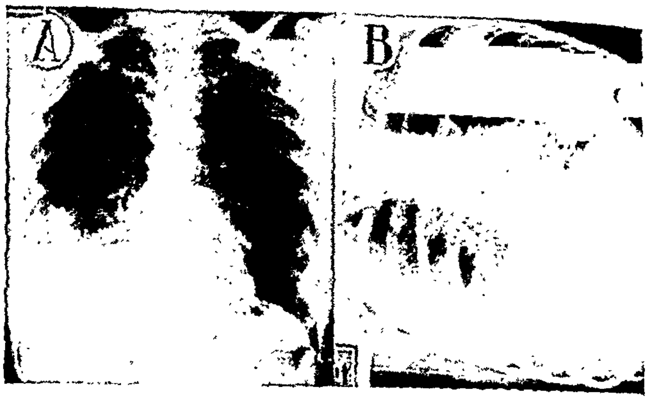

Fig. 2.—*A*, typical infrapulmonary effusion on right resembling diaphragmatic elevation. Note absence of usual signs of pleural effusion. *B*, chest film taken with patient in right lateral decubitus position shows obvious pleural effusion evacuated from infrapulmonary space and now occupying dependent position along lateral chest wall.

A second factor in the mechanism of subpulmonic effusion would seem apparent; that is, that the negative intrapleural pressure would be greatest at the base as a result of diaphragmatic movement. As the diaphragm descends, the negative intrathoracic pressure in the infrapulmonary pleural space is enhanced, so that the existing fluid in the pleural cavity is withdrawn, by virtue of the greater pressure gradient, from the other compartments of the pleural sac that are not influenced so directly by the diaphragmatic excursion. There results a tendency for the fluid or liquid to be sucked into the infrapulmonary space. Conversely, with elevation of the diaphragm, the negative intrathoracic pressure at the base is reduced, or becomes positive, disproportionate to the pressure changes effected in the remainder of the pleural cavity, and the liquid evacuates the subpulmonic space. This phenomenon may be observed in infrapulmonary effusion by having the patient affect forced expiration, the fluid being expressed from the subpulmonic space. With inspiration, the liquid is recovered in the pleural compartment below the inferior surface of the lung.

Briefly, the distribution of fluid in the pleural cavity is dependent upon the competitive forces of the lung and fluid to occupy space; the combined factors of a greater negative intrathoracic pressure in the space above the diaphragm and the greater elasticity of the base of the lung result in fluid collecting in the subpulmonic area. Gravitational force is undoubtedly an important influence, for the diagnosis is resolved by observing the fluid migration to dependent portions, when the patient is placed in various positions.

RECOGNITION AND DIAGNOSIS

The recognition of this entity is directly proportional to the interpreter's suspicion and his subjection of the patient to proper roentgenographic procedures. It is recommended that any patient who shows clinical or roentgenographic signs simulating an elevated diaphragm should have further studies to exclude the presence of infrapulmonary effusion. It has been shown by other investigators[3] that pleural liquid may not be recognized roentgenographically in quantities less than 400 cc. Possibly the reason that effusions of this magnitude and less cannot be detected by the routine anteroposterior chest roentgenogram, made with the patient in the upright position, is that the liquid collects in the subpulmonic space and, when distributed over the diaphragmatic dome, is not apparent even as infrapulmonary effusion. Consistent with this assumption is the theory that infrapulmonary effusion represents the earliest stages of fluid collected in the pleural cavity.[1b] The usual signs of pleural effusion superseding the signs of infrapulmonary effusion have been observed in several instances after progressively larger quantities of liquid collect in the pleural cavity; however, fluid, in volumes exceeding 1,000 cc., may locate exclusively in the subpulmonic space without producing any of the accepted roentgen features of pleural effusion. Therefore, infrapulmonary collections do not necessarily carry the inference that the effusion is either early or small in amount.

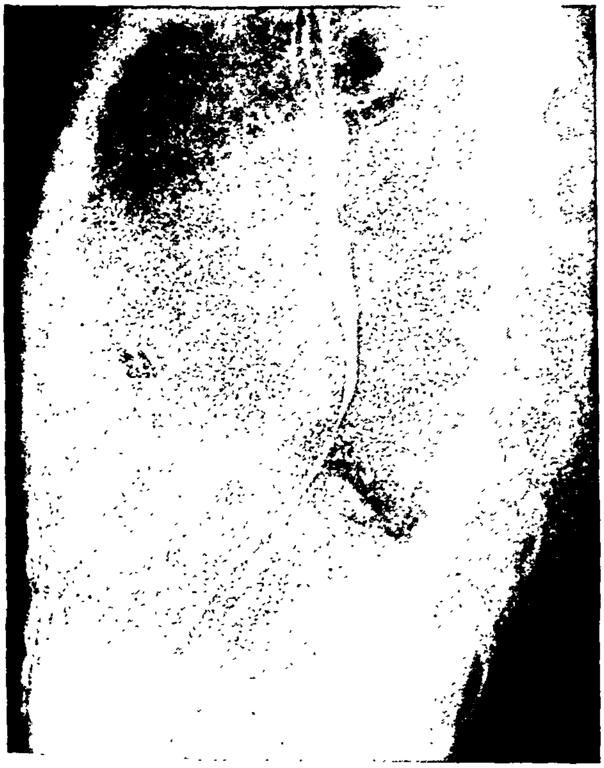

Fig. 3.—Lateral view of infrapulmonary effusion on right simulating elevated diaphragm. Superior limits of infrapulmonary effusion on right resemble normal diaphragmatic contour. Posteroinferior slope and sharpness of posterior costophrenic sulcus are preserved. Small linear density (arrow) in major lobar fissure inferiorly is only clue that effusion may exist.

Distribution of Effusion.—On the routine anteroposterior chest roentgenogram, made with the patient in the upright position, the density of the liquid in the subpulmonic space forms an arcuate convexity on its superior surface and blends with the diaphragmatic shadow below to resemble an elevated diaphragm (fig. 1, 2*A*, 3, 4, 5, and 6*A*). The superior convex border of the liquid, as delineated by the visceral layer of the pleura on the undersurface of the lung, is sharp, round, and smooth and may conform identically to the usual arcuation of the diaphragmatic leaf. On the lateral chest roentgenogram (fig. 3), the normal caudal slope of the diaphragm posteriorly is maintained and the posterior costophrenic sinus may remain sharp, although, ordinarily, filling of the posterior pleural sinus is considered the earliest sign of pleural effusion. Other common diagnostic roentgen features of pleural effusion, such as blunting of the costophrenic sinuses, flattening of the diaphragmatic shadow, blurring at the lung base, graduating zones of opacity,[4] the ribbon-like density along the lateral thoracic wall,[5] and dislocation of the mediastinal contents toward the opposing slide, may also be completely absent. Occasionally, the diagnosis can be inferred from the contour of what appears to be the diaphragmatic dome. The superior border of the fluid originating medially may course obliquely upward toward the lateral thoracic wall and extend farther laterally than the normal diaphragmatic cupula, before it descends into the lateral costophrenic sinus (fig. 4). This contour is not precisely that of the normal diaphragm, and when it is observed infrapulmonary effusion may be suspected.[1c] Of course, if any of the usual roentgen features of pleural effusion are present in association with what appears to be an elevated diaphragm, a subpulmonic fluid collection should be suspected. At times, a small amount of liquid may be seen dissecting into the inferior portion of the major

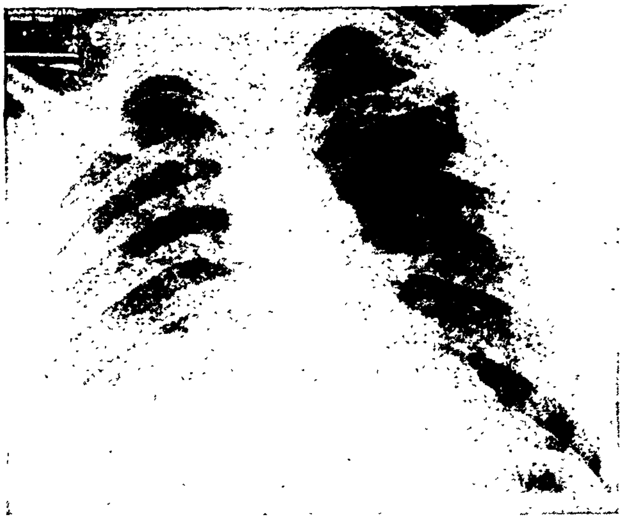

Fig. 4.—Infrapulmonary effusion simulating elevation of right hemidiaphragm. Note angulation and lateral descent of superior margin of effusion, which differs slightly from normal contour of diaphragmatic leaf.

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[3] Ganter, G.: Pressure in Pleural Cavity, Deutsches Arch. klin. Med. 141: 68 (Nov.) 1922. Kaunitz, J.: Landmarks in Simple Pleural Effusions, J. A. M. A. 113: 1312 (Sept. 30) 1939.

[4] Kaunitz, J.: Liquid Levels and Other Liquid Surfaces in Pleural Effusions: Study of Their Dynamics, J. Thoracic Surg. 4: 300 (Feb.) 1935.

[5] Rigler, L. G.: Roentgen Diagnosis of Small Pleural Effusions: New Roentgenographic Position, J. A. M. A. 96: 104 (Jan. 10) 1931.

lobar fissure (*fig.* 3), which may be a clue that pleural effusion actually accounts for the apparitional diaphragmatic elevation. If the infrapulmonary fluid collection is on the left, its presence may be suspected by the increased distance between the inferior margin of the lung and the superior margin of the gastric air bubble (fig. 5*A* and 6*A*). Normally, the gastric fundus occupies an anatomic position directly under and in close proximity to the diaphragm; any increased thickness of the density between these two structures may be interpreted as an interposed mass or fluid situated subdiaphragmatically or supradiaphragmatically. In such a circumstance, it is advisable to do barium studies of the stomach [6] or distend the stomach with gas by giving the patient a carbonated beverage or compound effervescent powder (Siedlitz powder). If, by these studies, the gastric fundus is shown to remain smooth and round and maintain its normal contour, one may exclude the possibility that the fluid is collected beneath the diaphragm, for, in this instance, it would impress or otherwise deform the gastric outline. With this line of reasoning, one may conclude that the distance between the base of the lung and the smooth, round gastric fundus is produced by a collection of fluid above the diaphragm in the pleural cavity. In infrapulmonary effusions of the right side, a similar diagnostic sign would have to be obtained by the presence of free air in the peritoneal cavity (pneumoperitoneum, diagnostic or spontaneous) serving as a contrast medium to outline the undersurface of the diaphragm. Any accentuation of the thickness of the space between the abdominal air and the lung base may be interpreted as an interposition of fluid in the infrapulmonary space (fig. 5*B*).

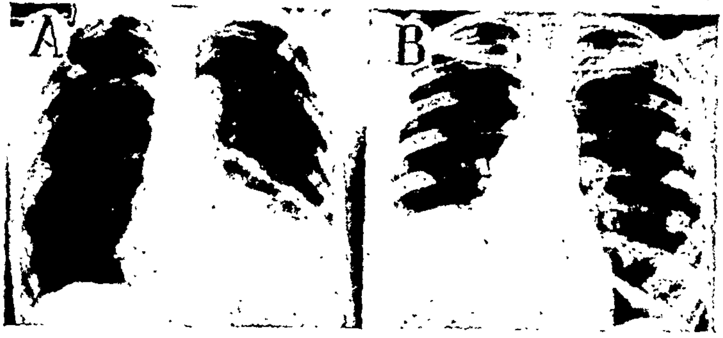

Fig. 5.—*A*, infrapulmonary effusion on left indicated by accentuated distance between the superior limits of gas-distended gastric fundus (patient was given a carbonated beverage) and inferior limit of left lung. Fundus is not deformed, indicating that interposed density is above diaphragm. *B*, infrapulmonary effusion on right complicating large subphrenic abscess. *Gas-filled cavity delineates undersurface of diaphragm*, indicating that supradiaphragmatic pleural effusion is responsible for increased thickness of density between diaphragm and lung base. Same sign may be elicited by diagnostic pneumoperitoneum.

Change in Distribution.—Ordinary anteroposterior chest roentgenograms, taken with the patient in the upright position, exposed during the expiratory phase, illustrate another feature of diagnostic consequence; that is, that the distribution of the effusion may be changed. When the roentgenogram is exposed during this phase, the liquid is forcibly displaced from the infrapulmonary space by the ascent of the diaphragm and assumes the typical S-line of pleural effusion. This may also be observed by fluoroscopy.[1a] Parsonnet [1f] effected a similar change by pneumoperitoneum in which the intraperitoneal pressure produced elevation of the diaphragm and displaced the fluid from beneath the lung.

At roentgenoscopy, the superior convex contour of the fluid may show an excursion consistent with the normal diaphragmatic movement, but, with closer observation, one sees transmission of the cardiac pulsations through the liquid medium. Six of the patients whose cases were reviewed for this paper and who were observed under the fluoroscope showed a pulsatile activity of the superior margin of the infrapulmonary effusion that was synchronous with the cardiac cycles. If this finding is recognized at fluoroscopy, the diagnosis will be evident.

Shift of Effusion with Different Positions.—Fluoroscopic or roentgenographic examination of the patient in different postures, so that the shift of the effusion from the infrapulmonary space can be observed, is perhaps the easiest and most informative of the roentgen procedures. As the patient is put in the decubitus position (lying on the affected side), the liquid is seen in the lateral costophrenic sinus and along the lateral thoracic wall, producing the characteristic ribbon-like density of pleural effusion (fig. 2*B* and 6*B*). If the patient is put in the opposite decubitus position (lying on the unaffected side), the liquid dissects into the mediastinal reflection of the pleural cavity (fig. 6*C*). With the patient

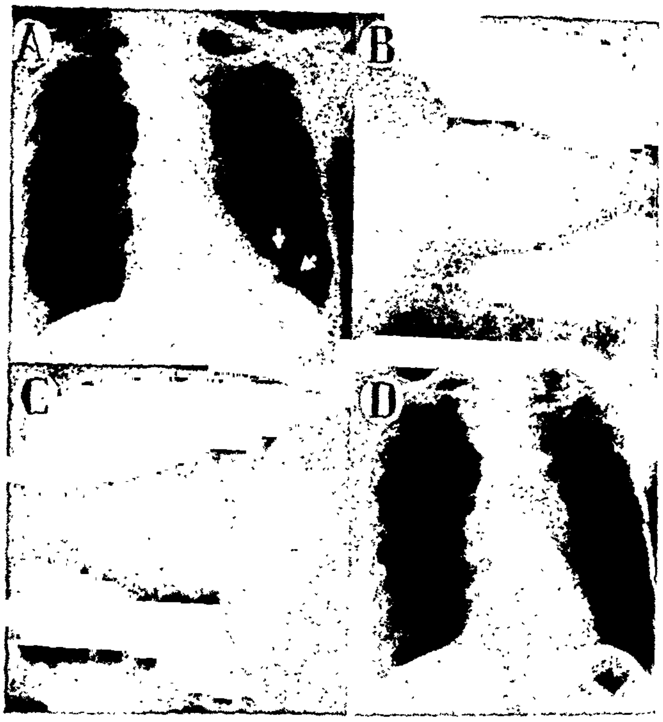

Fig. 6.—*A*, routine anteroposterior chest roentgenogram, taken with patient in upright position. Elevation of left hemidiaphragm and solid parenchymal mass (arrows) in left lung base appear to be present. The patient had had radical mastectomy for breast carcinoma, and mass was initially interpreted as metastatic lung lesion. *B*, anteroposterior chest roentgenogram taken with patient in left lateral decubitus position. Effusion dissects laterally, and apparent lung density has disappeared. *Illusion of diaphragmatic elevation is lost. C*, anteroposterior chest roentgenogram taken with patient in right lateral decubitus position. Effusion occupies mediastinal reflection of pleural cavity, and there is no longer illusion of high left leaf of diaphragm or mass in left lung. *D*, routine anteroposterior chest roentgenogram, taken with patient in upright position (taken after thoracentesis). No fluid could be obtained until patient was placed in left lateral decubitus position, at which time 700 cc. was removed and symptoms were completely relieved. Diaphragm is at normal level, and there is no evidence of residual pleural effusion. Note relative distance between gastric air bubble and inferior margin of left lung. Compare this film with initial film of patient before thoracentesis (fig. 6*A*).

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6. Hodges, F. J.: Downward Displacement of Gastric Cardia, Radiology 54: 194 (Feb.) 1950.

in the Trendelenburg position, the effusion gravitates over the apex; with the patient in a supine position, the liquid forms a thin sheet in the dependent posterior pleural space and produces a general hazy opacification of the affected hemithorax. With the patient in any of these positions, as the effusion is distributed to dependent portions of the pleural cavity, the illusion of an elevated diaphragm is dispelled (fig. 6*B* and 6*C*). Yater and Rodis[13] observed by fluoroscopy the shift of a pleural effusion when the patient was moved from a recumbent to a vertical position. With vertical tilting, the liquid remained in the posterior pleural space until the patient's position was almost upright. At this instant, the fluid collected in the infrapulmonary space, simulating the original appearance of an elevated diaphragm. This sequence has been duplicated repeatedly in our patients.

Kymography.—Roentgen kymography may be used to observe the pulsatile activity of the infrapulmonary liquid and its movement coincident with the diaphragmatic excursion; however, this is a refined roentgenographic procedure that is not available to most physicians and is not necessary in the diagnosis of infrapulmonary effusion.

Evaluation of Pulmonic Structure.—Comment should be given to an additional diagnostic application of roentgenograms exposed with the patient in different positions when a pleural effusion exists. Frequently, the density of the pleural liquid masks roentgenographic study of the lung, and it is impossible to evaluate the integrity of the pulmonic structures. If films of the chest are exposed with the patient in various postures, corresponding portions of the lungs will be cleared of the superimposed pleural density and hidden pulmonary abnormalities may become evident. Conversely, confusing pleural fluid densities that are interpreted as lung pathology may disappear as the position of the patient is changed. This point is illustrated in figure 6*A* where the apparent nodular density in the left base, which was interpreted initially as a metastatic lung lesion, completely vanished on the multipositioned films. It obviously represented a fortuitous density of the pleural liquid, which produced the visual impression of a solid lung mass. Furthermore, in patients who have passive congestion of the pulmonary venous circuit, the lateral decubitus position will effect a redistribution of the venous stasis to the dependent lung; the lung on the upward side will appear to be free of any congestion, which renders it roentgenographically clear and eliminates the deceptive shadows of vascular engorgement. This phenomenon has been observed on several occasions and made it possible in two cases to perceive a hypostatic pneumonia that was not otherwise an available roentgen diagnosis.

TREATMENT

The treatment of infrapulmonary pleural effusion is not unlike the treatment of pleural fluid of any etiology; however, thoracentesis may be unsuccessful in evacuating the fluid from the infrapulmonary space (legend, fig. 6) unless the patient is placed in a decubitus position with the involved side down during the tapping procedure.

In infrapulmonary effusions, the respiratory incapacity may be quite severe, even though the volumetric accumulation of the fluid is relatively small. The cause for this has been alluded to in the foregoing paragraphs and, in part, may be based upon the greater mobility and elasticity of the lung base, so that any encroachment at this point is more severely reflected in functional deficiencies. Even if the effusion is not quantitatively sufficient to effectively reduce the ventilatory space, difficult breathing may still result from (1) the mechanical presence of the effusion reducing the pulmonary compliance and (2) the proprioceptive reflexes occasioned by the pressure of the fluid on the lung or diaphragm, which tends to perpetuate inspiration and hold the lungs in a state of inflation. With this physiological concept and with the experience encountered with the patients reviewed for this paper, it is recommended that a thoracentesis be performed if there are any symptoms of respiratory embarrassment, even though only small collections of fluid in the infrapulmonary space are present. Any further treatment is the same as the usual therapeutic measures for the underlying disease.

SUMMARY

The incidence of infrapulmonary pleural effusion in my experience is greater than is recognized. An accurate diagnosis of this condition can be established by the use of proper roentgenographic procedures. Two basic factors in the mechanism of confinement of fluid in the infrapulmonary pleural space are the greater negative intrathoracic pressure in the space above the diaphragm and the greater elasticity of the base of the lung. Even though the amount of accumulated fluid may be small, respiratory incapacity may be severe; thoracentesis is recommended if there are any symptoms of respiratory embarrassment.

5201 Harry Hines Blvd.

The Waterhouse-Friderichsen Syndrome.—The seriousness of the Waterhouse-Friderichsen syndrome has been stressed since its original description. The classical picture of an acute infection, usually meningococcemia, associated with profound circulatory collapse and followed rapidly by purpura, anuria, hypoglycemia and death is well known. . . . In the patient whose condition clinically suggests this syndrome, blood morphology may be a valuable diagnostic aid. A marked neutrophilia with normal eosinophil levels, or even eosinophil levels above 50 to 75 per cu. mm. of blood, are common findings. . . . Blood and spinal fluid smears and cultures should be made. This is one of the rare instances in which bacteria, usually meningococci, may be found in a direct blood smear, especially one made by puncturing petechiae in the skin. Smears and cultures of spinal fluid generally are negative, since death usually occurs before the leptomeninges are invaded. . . . Prior to the advent of cortisone, patients developing the Waterhouse-Friderichsen syndrome died. Today, however, a considerable number of patients treated with antibiotics and adrenal steroids recover. Therapy is directed along three lines: (1) intensive antibiotic treatment for control of the infection; (2) cortisone and hydrocortisone in large, repeated doses; and (3) other supportive measures, as adequate fluid and electrolyte replacement.—C. D. McMillan, M.D., W. N. Powell, M.D., and R.D. Haines, M.D., The Diagnosis and Treatment of Adrenal Insufficiency, *The Medical Clinics of North America,* July, 1955.

CLINICAL NOTES

CHRONIC PULMONARY BERYLLOSIS

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The occurrence of progressive changes in the lungs after exposure to finely divided beryllium compounds is now well recognized.[1] The clinical picture may be acute or chronic and is characterized in both types by pulmonary insufficiency. The chronic form occurs usually after a period of clinical latency following the last exposure to beryllium. The characteristic pathological picture in chronic beryllosis consists of multiple granulomas, increased interalveolar septal fibrosis, and a lymphocytic and mononuclear cellular response. The diagnosis is frequently unsuspected because of the delayed emergence of symptoms after the last contact and the similarity clinically and on the roentgenogram to sarcoid, silicosis, and tuberculosis. The roentgenographic findings may precede symptoms by many years or may not be noted until after the onset of symptoms. The following case is considered of interest because, although it embodies the classical clinical features of the disease, the definitive diagnosis was established and appropriate treatment made possible only through the medium of a lung biopsy.

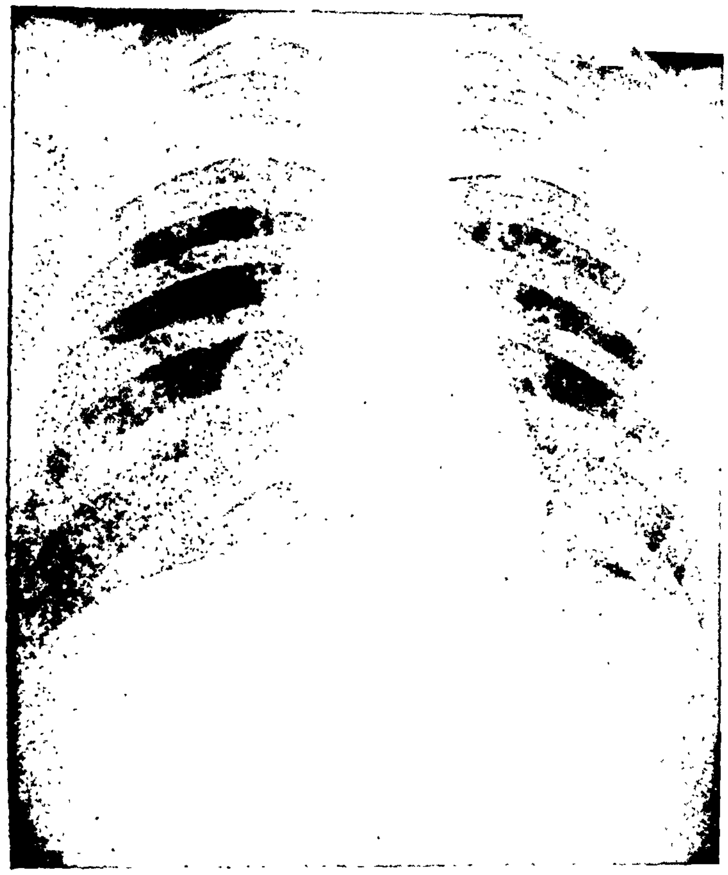

Fig. 1.—Roentgenogram showing diffuse coalescent nodular infiltration, most marked in the upper lobes.

REPORT OF A CASE

A 30-year-old Negro male was admitted to the hospital on June 20, 1953, with the chief complaint of dyspnea for one year. This was previously present on exertion only but was now present even at rest. His only other complaints were a dry cough and a weight loss of 5 lb. (2.3 kg.) in the past six months. Systemic review was essentially normal. The history was significant. For a period of four months between October, 1942, and January, 1943, he had worked in a factory using beryllium. His duties had been to mix chemicals in powder form. He had stopped work because of the development of a generalized rash and swelling of the joints of undetermined cause. He served in the Army from 1944 to 1946, being stationed in the Philippines, Japan, and France. From September, 1946, until the present he has been employed as an attendant in a Veterans Administration hospital. A preemployment roentgenogram on Sept. 9, 1946, revealed some increase in the hilar shadows bilaterally but no parenchymal disease. Subsequent serial roentgenograms showed no change until May 5, 1949, when the right hilar shadows appeared more prominent. Slight granularity of the lung fields was first detected on a roentgenogram of Nov. 29, 1950. By June 11, 1951, definite stage 1 nodulation was present. Hospitalization for 42 days was effected at this time. The only significant finding was the report of sarcoid following a supraclavicular fat pad biopsy. Subsequent roentgenograms showed increase in the nodulation with beginning coalescence in April, 1952. The last film (March 10, 1953) prior to this admission showed further coalescence of the nodules. Physical examination revealed a well-developed and well-nourished adult Negro in no apparent distress. The pulse rate was 88 per minute, blood pressure, 130/80 mm. Hg, weight, 172 lb. (78 kg.), and respirations, 24 per minute. The lungs were clear throughout, and the rest of the general examination revealed no abnormalities. Roentgenographic study (fig. 1) revealed a coalescent nodular infiltration throughout both lungs, most marked in the upper lobes. The lymph nodes in both hilar regions were enlarged. Both leaves of the diaphragm were smooth and showed 80% of normal motion. A complete blood cell count and urinalysis revealed normal findings. The blood protein value was 7.84 gm. per 100 cc., with albumin 5.4 gm. per 100 cc. and globulin 2.7 gm. per 100 cc. The tuberculin test was negative to both strengths of purified protein derivative of tuberculin.

The clinical picture was compatible with pulmonary sarcoidosis or pulmonary beryllosis. For purposes of definitive diagnosis a lung biopsy with the use of the Klassen technique[2] was performed on June 23, 1953, with the patient under local anesthesia. The lung was found free in the pleural space and contained fine nodules throughout the entire palpable area. Histological study revealed the typical pattern of chronic pulmonary granulomatosis seen in beryllosis (fig. 2). Pulmonary function studies gave the following results: vital capacity, 2,982 cc. (55% of predicted value); maximum breathing capacity, 181 liters per minute (127% of predicted value); ventilation at rest, 7.7 liters per minute; ventilation during the first minute of recovery, 40.5 liters per minute; arterial oxygen saturation at rest, 95% and after exercise, 79.8%; and residual volume, 1,297 cc., representing 27% of total lung volume.

From these findings it was evident that no significant emphysema was present and that ventilatory function was excellent despite a restricted lung volume. These features, in addition to the hyperventilation that was very marked on exercise and the precipitous fall in arterial oxygen saturation, strongly suggested

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[1] (*a*) Tebrock, H. E.; Machle, W., and Wilson, S. A.: Berylliosis: Acute Pneumonitis and Pulmonary Granulomatosis of Beryllium Workers, Merck Rep. 61:20 (July 1952. (*b*) Chesner, C.: Chronic Pulmonary Granulomatosis in Residents of Community Near Beryllium Plant: Three Autopsied Cases, Ann. Int. Med. 32:1028 (June) 1950. (*c*) Sterner, J. H., and Eisenbud, M.: Epidemiology of Beryllium Intoxication, A. M. A. Arch. Indust. Hyg. 4:123 (Aug.) 1951. (*d*) Machle, W.; Beyer, E., and Gregorius, F.: Berylliosis: Acute Pneumonitis and Pulmonary Granulomatosis of Beryllium Workers, Occup. Med. 5:671 (June) 1948.

[2] Klassen, K. P.; Anlyan, A. J., and Curtis, G. M.: Biopsy of Diffuse Pulmonary Lesions, Arch. Surg. 59:694 (Sept.) 1949.

the presence of the syndrome described as "alveolar-capillary block," which is typically seen in beryllosis.[3] After treatment with 1,900 mg. of cortisone over a period of 11 days, objective improvement was noted. The vital capacity had increased to 3,461 cc. and the maximum breathing capacity to 216 liters per minute. The resting arterial oxygen saturation was 98.0% and significantly fell to only 89.6% after exercise. The resting ventilation was of the same order as before treatment, but there was a diminution of the ventilation during the recovery period. Subjective improvement was also noted. The patient's sense of well-being was enhanced, and he performed the exercise with far less discomfort. After the above studies were completed, therapy was started with a maintenance dose of 50 mg. of cortisone daily for the next 30 days. The dose was then reduced to 25 mg. daily, and this dosage was continued until Jan. 12, 1954. Physiological studies at that time revealed no further improvement in the patient's pulmonary function. Repeated roentgenograms of the chest taken during the period of treatment have shown no change in the nature or extent of the pulmonary changes. Symptomatically there has also been no further improvement in the degree of cough or dyspnea.

COMMENT

Pulmonary involvement in beryllosis results from inhalation of finely divided beryllium compounds. The normal protective mechanism of the upper respiratory tract removes a considerable number of the inhaled particles, but a variable number reach the alveoli. Absorption occurs from the lungs, depending on the solubility of the compound, and the beryllium is distributed throughout the body.[1d] It appears that the less soluble compounds tend to cause chronic beryllosis, which may explain the delayed emergence of symptoms after exposure. In this case the exact nature of the inhaled compounds was not determined. The onset of chronic beryllosis may be insidious, with minimal cough and fatigue, but pulmonary insufficiency is soon evidenced by progressive dyspnea and cyanosis. The basic defect in pulmonary function is that of an alveolocapillary block, in that there is impaired diffusion of oxygen across the alveolar membrane, the permeability of the latter presumably having been altered by the deposition of beryllium granulomas. Pulmonary emphysema is generally not present early, and ventilatory function is normal. These facts were exemplified by the pulmonary function studies in this case that indicated the basic defect to be that of an alveolar-capillary disturbance. As the granulomatous process develops, emphysema becomes a factor.[4]

The diagnosis in chronic beryllosis is generally difficult. The delayed emergence of symptoms does not bring the patient to the roentgenologist very early. The roentgenologic picture itself is not specific, and without a history of exposure to beryllium the true diagnosis may not be suspected. It is in such diffuse pulmonary lesions that lung biopsy affords the means of establishing a rapid, accurate diagnosis. The histological findings are sufficiently specific to permit identification if an adequate piece of lung tissue can be obtained for study. This is readily possible by means of the Klassen type of biopsy. The procedure is simple, well tolerated, and produces minimal complications.[5] It has been possible to recover beryllium from the lungs of persons who have died of beryllosis.[6] It remains to be seen whether the small amount of tissue obtained by this form of biopsy will permit this determination.

The prognosis without treatment is generally poor, mortality rates ranging from 10 to 25%. Death occurs from pulmonary insufficiency with eventual failure of the right side of the heart. The use of corticotropin (ACTH) and cortisone has produced definite improvement subjectively and objectively as measured by pulmonary function studies. These agents appear to retard the progression of the disease into a more fibrotic state.[1a] Prompt application of this form of therapy was possible in this case with establishment of the correct diagnosis after biopsy. There was definite improvement with the use of cortisone over a period of six months as reflected in the symptoms and pulmonary function studies; however, no change in the roentgenogram was noted.

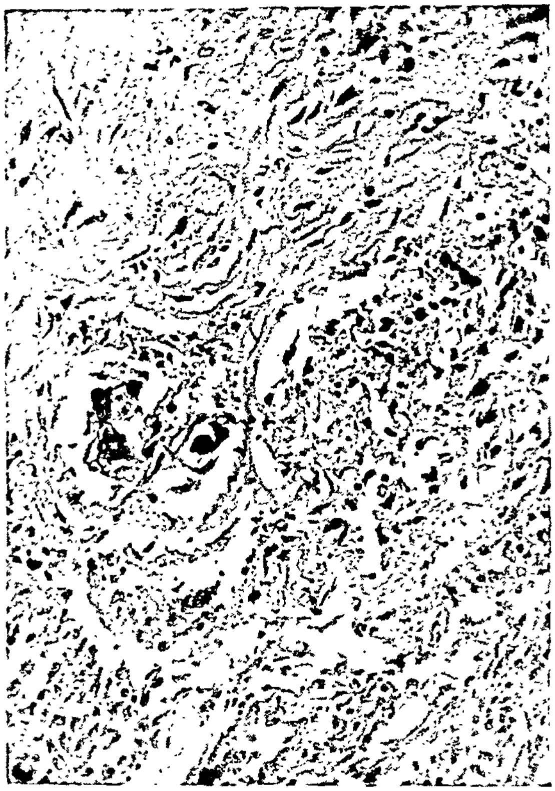

Fig. 2.—Photomicrograph showing a granuloma containing several doubly refractile, blue, laminated, amorphous bodies characteristic of beryllosis, × 200. Note the marked fibrosis.

SUMMARY

In a case of chronic pulmonary beryllosis, with onset of disease eight years after exposure to beryllium had ceased, a definitive diagnosis was established through the medium of a lung biopsy. Treatment with cortisone appears to have produced temporary arrest of the disease.

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3. Austrian, R., and others: Clinical and Physiologic Features of Some Types of Pulmonary Diseases with Impairment of Alveolar-Capillary Diffusion: The Syndrome of "Alveolar-Capillary Block," Am. J. Med. **11**: 667 (Dec.) 1951.

4. Dutra, F. R.: Pneumonitis and Granulomatosis Peculiar to Beryllium Workers, Am. J. Path. **24**: 1137 (Nov.) 1948.

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6. Dutra, F. R.; Cholak, J., and Hubbard, D. M.: Value of Beryllium Determination in Diagnosis of Berylliosis, Am. J. Clin. Path. **19**: 229 (March) 1949.

TREATMENT OF PYELOURETEROCYSTITIS CYSTICA WITH NEOMYCIN

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Ward A. Soanes, M.D.
and
Col. Earl C. Lowry (MC), U. S. Army

Pyeloureterocystitis cystica is a progressive disease of obscure etiology, but the concensus of opinion is that it is secondary to chronic urinary tract infection.[1] Numerous treatments have been advocated, but all have apparently given only temporary relief and have not altered the basic progression of the disease. It was our opinion that intensive chemotherapy would eliminate the chronic focal infection and thus stop the progression. The patient whose case is to be presented had a chronic pyelonephritis, due to Aerobacter aerogenes, that was resistant to all of the commonly used antibiotics. After many attempts at chemotherapy had failed, neomycin was given intramuscularly, with dramatic results.

Neomycin was chosen, since A. aerogenes is generally sensitive to this drug and neomycin resistance does not correlate with resistance to other broad-spectrum antibiotics, with the possible exception of streptomycin.[2] Intramuscular administration is necessary, since this drug is poorly absorbed from the gastrointestinal tract. When given parenterally, it is preferentially excreted by the kidneys, thus making it an excellent drug for treating genitourinary tract infections. There is evidence that bacteria rarely develop resistance to neomycin in vivo.[3]

The primary toxic effects of neomycin are damage to the auditory portion of the eighth nerve and to the renal parenchyma. Recent evidence, however, indicates that the therapeutic-toxic ratio is low enough that use of neomycin is indicated if the following criteria are met [4]: (1) a neomycin-sensitive organism is present that does not respond to less potentially toxic agents, (2) renal function is good, and (3) dosage is limited to 1 gm. per day for 8 to 10 days. Waisbren and co-workers,[3a] Nesbit and co-workers,[4a] and Duncan and co-workers [4b] have reported series of genitourinary tract infections treated with parenterally given neomycin. They achieved excellent therapeutic results and no serious toxic side-effects when the above criteria were strictly followed.

REPORT OF A CASE

The patient was a 37-year-old white male, whose history revealed recurrent otitis media in childhood and scarlet fever at age 11. There were no known sequelae and no history indicative of chronic renal disease. In October, 1951, during a routine physical examination, a diagnosis of inactive aortic insufficiency was made. In February, 1952, he had onset of acute chills and fever and was hospitalized. A diagnosis of subacute bacterial endocarditis due to alpha-hemolytic streptococci was made, and he responded well to massive doses of penicillin. In April, 1952, he had an episode of apparently sterile left cerebral embolism, with subsequent nearly complete recovery. In August, 1952, he was digitalized due to extensive cardiac valvulitis and has since been maintained with 0.1 gm. of digitalis daily, with no episodes of cardiac failure. During this hospitalization no evidence of any renal disease was noted. In August, 1952, he developed an abscessed tooth from which alpha-hemolytic streptococci were cultured. This extraction and further dental work was covered with therapeutic courses of penicillin and oxytetracycline (Terramycin).

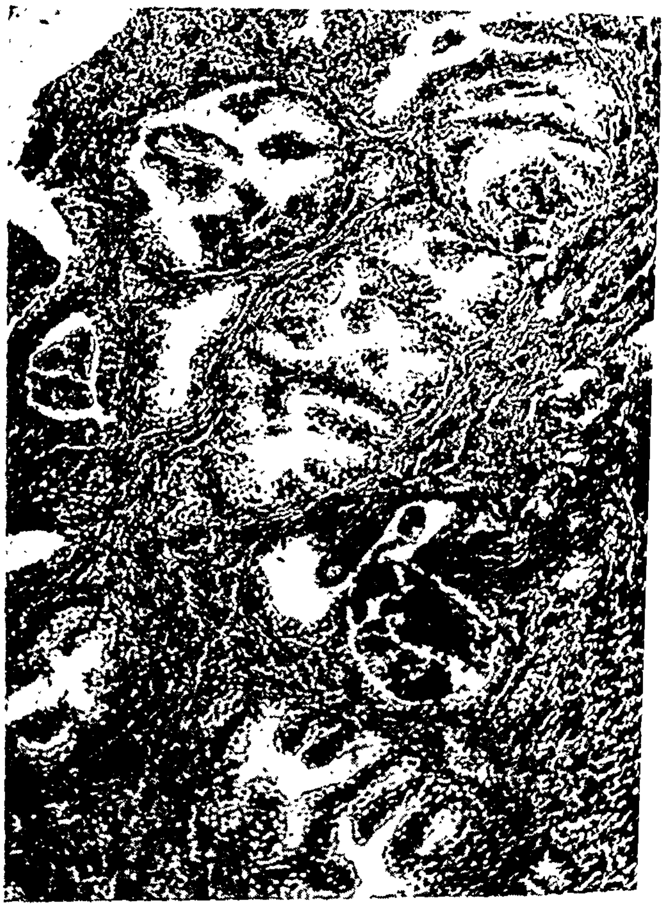

Fig. 1.—Biopsy specimen of bladder lesion showing cystitis glandu cystica (× 100).

On Dec. 1, 1952, the patient was again hospitalized with cl
and fever, sharp left subcostal pain, and urinary frequency
burning. Blood cultures were repeatedly negative, but a g
pyuria was noted from which A. aerogenes was cultured.
organism was sensitive in vitro to chloramphenicol and stre
mycin and resistant to penicillin, bacitracin, chlortetracy
(Aureomycin), and oxytetracycline. No other antibiotics
tested. Urine cultures and guinea pig inoculations for M
bacterium tuberculosis were negative. Intravenous and r
grade pyelograms revealed minimal calycectasis of the mi
calyx of the left kidney, compatible with an old pyelonep
or pyelitis cystica.[1a] Cystoscopy revealed a picture typic
cystitis cystica in the bladder. Biopsy of the cystic lesions
done, and the pathological diagnosis was cystitis glandu
cystica (fig. 1). From December, 1952, through February,
the patient was given massive doses of chloramphenicol
hydrostreptomycin, sulfisoxazole (Gantrisin), and methena
(Mandelamine) mandelate in various combinations, with
erate clinical improvement; but the gross pyuria persisted,

From Letterman Army Hospital, San Francisco. Now at Buffalo (*Dr. Soanes*).

The neomycin used in this study was supplied by the Upjohn Company, Kalamazoo, Mich.

The tube sensitivity tests for this study were done by Dr. Ernest Jawetz, Professor of Microbiology, University of California School of Medicine, San Francisco.

1. (*a*) Hinman, F.; Johnson, C. M., and McCorkle, J. H.: Pyelitis and Ureteritis Cystica: 3 Case Reports with Clinical Diagnosis, J. Urol. **35**: 174-189 (Feb.) 1936. (*b*) Hoyt, H. S.: Cystitis Cystica as a Single Tumor, ibid. **59**: 424-430 (March) 1948. (c) Wershub, L. P.; Kirwin, T. J., and Biel, L.: Bilateral Pyelitis Cystica and Ureteritis Cystica: A Case Report with a 6-Year Follow-Up, J. Internat. Coll. Surgeons **18**: 443-455 (Oct.) 1952.

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3. (*a*) Waisbren, B. A., and Spink, W. W.: A Clinical Appraisal of Neomycin, Ann. Int. Med. **33**: 1099-1119 (Nov.) 1950. (*b*) Footnote 2.

4. (*a*) Nesbit, R. M.; Dodson, A. I., Jr., and MacKinney, C. C.: Neomycin *in the Treatment* of Urinary Tract Infections, Antibiotics & *Chemother.* **2**: 447-452 (Sept.) 1952. (*b*) Duncan, G. G.; Clancy, C. F.; Wolgamot, J. R., and Beidleman, B.: Neomycin: Results of Clinical Use in 10 Cases, J. A. M. A. **145**: 75-80 (Jan. 13) 1951. (c) Footnotes 2 and *3a*.

the urine culture remained positive. Repeat in vitro sensitivity tests at this time showed that the Aerobacter organisms had become insensitive to chloramphenicol and streptomycin, but additional tests showed them to be moderately sensitive to sulfisoxazole, neomycin, and polymyxin. Further intensive therapy with penicillin, streptomycin, and sulfisoxazole combined and a therapeutic course of polymyxin did not help. Therapy with polymyxin was stopped after seven days due to neurotoxic symptoms. Repeat cystoscopy and retrograde pyelography in March, 1953, showed marked progression of the cystic lesions into both ureters and the pelves of both kidneys (fig. 2). Urine cultures from both ureters were positive for A. aerogenes. The patient was given further intensive sulfisoxazole therapy and a therapeutic course of nitrofurantoin (Furadantin) with no improvement.

On July 28, 1953, the patient was rehospitalized for a trial of therapy with intramuscularly given neomycin. In vitro tube sensitivity tests on the Aerobacter organisms at this time showed that neomycin was inhibitory and lethal in a concentration of 2 mcg. per milliliter but only inhibitory at 1 mcg. per milliliter. No other single antibiotic was lethal. The only antibiotic combination that was lethal was polymyxin, 0.5 mcg. per milliliter, plus chloramphenicol, 10 mcg. per milliliter. There was no synergism between streptomycin and neomycin. These results were not reported until the initial course of neomycin and streptomycin had been completed. Blood urea nitrogen values were normal, and audiograms with masking revealed a 1 to 3% high tone loss bilaterally. Cystoscopy was performed again with essentially the same findings as before, and sodium indigotin disulfonate and phenolsulfonphthalein dye tests revealed good renal function. Therapy was started with 0.5 gm. of neomycin twice a day and 1 gm. each of streptomycin and dihydrostreptomycin daily. Within 48 hours, there was no microscopic pyuria, urine cultures were sterile, and there were no further urinary symptoms. After a week, therapy with the streptomycins was discontinued and the dosage of neomycin changed to 0.5 gm. daily for one additional week. One-quarter gram was then given twice a week for a month and once a week for another two weeks. During this time no microscopic pyuria was noted and urine cultures were repeatedly sterile. Seventeen days after therapy was stopped the patient had a recurrence of gross pyuria that promptly cleared with a single 0.5 gm. dose of neomycin. In the succeeding 10 months the patient has had six mild recurrences of pyuria with concomitant urine cultures growing A. aerogenes. In each case a single 0.25 gm. dose of neomycin has been completely effective in clearing the pyuria and sterilizing the urine. The Aerobacter organisms have remained moderately sensitive to neomycin in vitro but insensitive to all other antibiotics tested.

In March, 1954, cystoscopy and retrograde pyelograms were repeated and it was felt there had been approximately a 50% reduction in the cystic lesions of the bladder. Blood urea nitrogen values have remained normal, and a repeat audiogram showed a 12 to 15% high tone loss bilaterally. This was felt to be an appreciable, but not clinically significant, hearing loss. The patient is still being followed in June, 1955, and single 0.25 gm. doses of neomycin once or twice monthly are controlling all signs and symptoms.

COMMENT

Neomycin has long been thought of as a toxic drug, but recent literature reviews indicate that it is safe when properly used. In the case presented here, this drug was given in intermittent small doses for two years, after a therapeutic course. There was an excellent therapeutic response, and no serious toxic side-effects were observed. In spite of intensive and varied antibiotic treatment the severe chronic pyelonephritis due to A. aerogenes persisted in this patient until intramuscular therapy with neomycin was instituted. It is felt that the streptomycin played no role in this case, since it showed no synergism in vitro and was previously ineffective. The pyuria disappeared, and the urine culture became negative within 48 hours. The patient has had only infrequent mild recurrences since that time; these have been promptly and completely controlled with a single small dose of neomycin. Cystoscopy and pyelography have revealed a marked regression of the cystic disease since the institution of neomycin therapy, instead of the expected progression. It is postulated that pyeloureterocystitis cystica is a sequela of chronic urinary tract infection and that the patient is continually reinfected by the rupture of the small cysts. If this reinfection is not promptly controlled by effective antibiotic therapy the disease progresses. Many of the organisms producing the chronic urinary infections are resistant to the commonly used antibiotics, and thus treatment has been difficult. Neomycin has been shown to be an effective and safe drug to use in controlling some of these resistant infections.

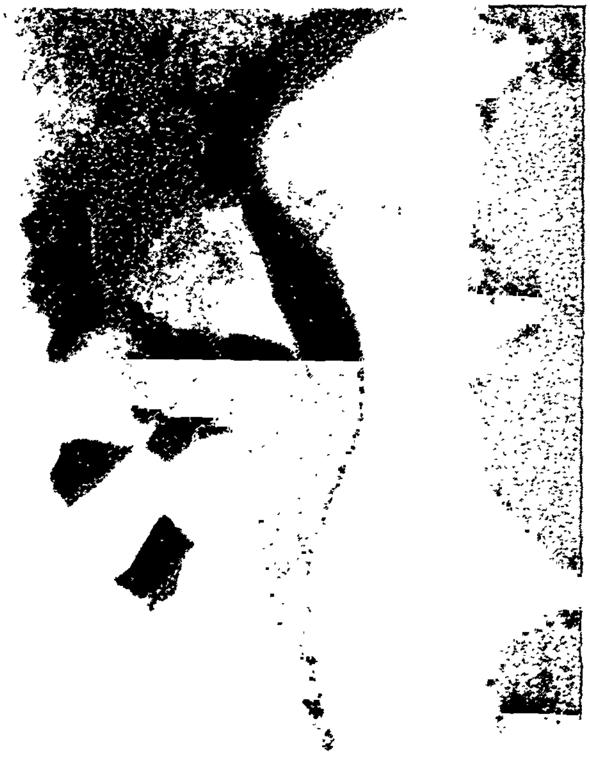

Fig. 2.—Right kidney and upper ureter on intravenous pyelogram taken in March, 1953.

SUMMARY

A patient with chronic pyelonephritis and pyeloureterocystitis cystica due to Aerobacter aerogenes was treated with intramuscularly given neomycin for two years, with complete remission of clinical symptoms, disappearance of pyuria, sterilization of the urine, and regression of the cystic lesions. Mild recurrences have been controlled with intermittent single small doses of neomycin as needed, and no significant toxic effects of the drug have been noted.

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ECTODERMAL DYSPLASIA PRESENTING AS FEVER OF UNKNOWN ORIGIN

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and
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One cause of fever of obscure origin may be ectodermal dysplasia of the anhidrotic type. The absence of sweat glands and other characteristic features may be easily overlooked. In the case presented, as in similar cases, many months elapsed before the diagnosis became apparent.

REPORT OF A CASE

A white male infant, aged 11 months, was brought to the Monroe Clinic on Feb. 24, 1954, because of bouts of unexplained fever since birth. The history revealed that the child had been delivered by cesarean section during the eighth month of the mother's pregnancy. This delivery was performed because of the development of an obstetric complication, the exact nature of which is not known. The infant weighed approximately 6 lb. (2,721.55 gm.) at birth. Shortly after birth the child developed a skin rash and was described as being a feeding problem. It was then noticed that the child began to run unexplained bouts of fever. The parents took the boy home from the hospital after a two and one-half week period. He remained at home four days. During this time his temperature was elevated intermittently. The child was returned to the local hospital, where no obvious cause of the fever was found. The child was then referred to another hospital. Except for a one-month period at home, the child remained in this hospital for the next seven months. During this time the child ran intermittent bouts of fever and was frequently hoarse. Numerous diagnostic procedures were performed, and many antibiotics were administered. Cultures from the larynx showed various organisms on different occasions. Endamoeba coli, Micrococcus pyogenes var. aureus, and hemolytic streptococci were isolated. These were not sensitive in vitro to streptomycin, oxytetracycline (Terramycin), cloramphenicol (Chloromycetin), chlortetracycline, or penicillin. Because of the laryngeal condition, the child was referred to an ear, nose, and throat specialist who found only a mild laryngitis. Throughout one week of observation, the child's temperature was normal. Culture at this time showed the presence of Pseudomonas aeruginosa. No significant abnormality to which the fever could be attributed was found. During the next three-month period while the child remained at home, he ran frequent bouts of fever to 103 F. Various antibiotics were prescribed for these fevers.

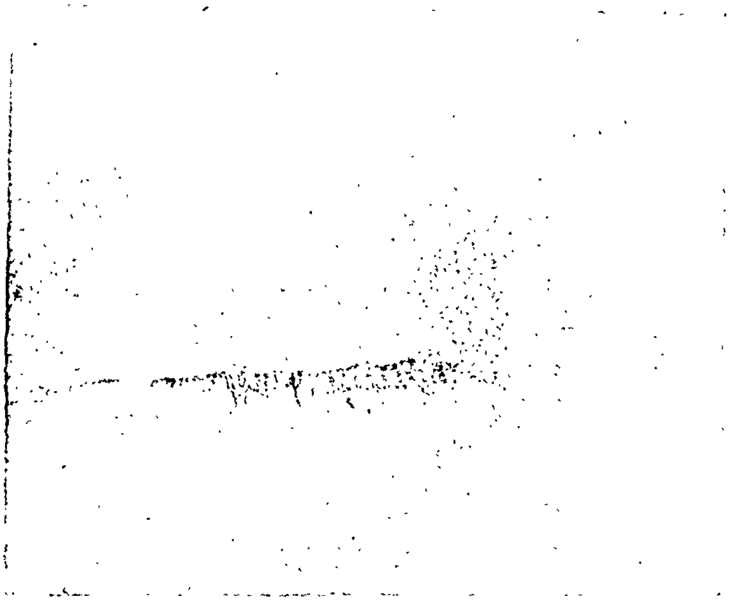
Fig. 1.—Peculiar wrinkling of skin around eyes and total absence of eyebrow hair in patient, aged 11 months, with ectodermal dysplasia.

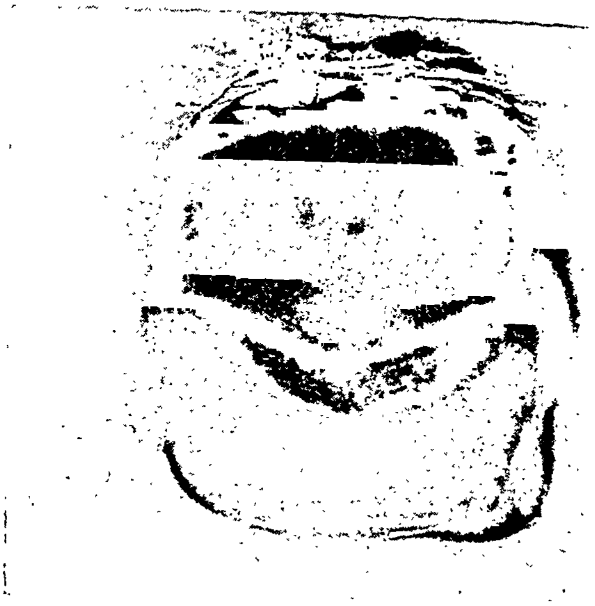
Fig. 2.—Mouth of child with ectodermal dysplasia showing hypoplasia of alveolar processes and abnormal dentition.

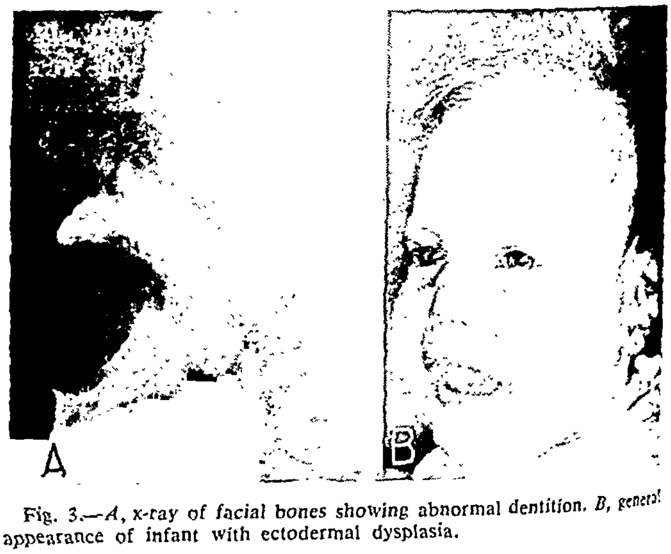

Fig. 3.—*A*, x-ray of facial bones showing abnormal dentition. *B*, general appearance of infant with ectodermal dysplasia.

Physical examination showed a well-developed, well-nourished white boy who appeared to be in surprisingly good condition, in view of his history. He seemed to have a normal mentality for an infant of 11 months. The child was of very fair complexion. A slight eczema was present on both cheeks on the initial examination, and the child's skin did not look normal. The skin was thin and translucent; it appeared somewhat dry and loose. There was an unusual and noticeable wrinkling about the eyes (fig. 1) that gave the infant the appearance of "a little old man." The hair was sparse and of fine texture. No eyebrows were present. The eyelashes of the lower lids were very sparse. A saddle deformity of the nose was present. The forehead was prominent but not abnormal for this age. One upper central incisor had erupted. This showed a brownish discoloration and was definitely peg-shaped (fig. 2). The alveolar processes were poorly developed. The child had a slightly hoarse cry. A definite concavity (so-called spoon-shaped deformity) of the fingernails on the first fingers bilaterally was noted. The remainder of the physical examination revealed no significant abnormality. The fundi were carefully checked by an ophthalmologist who found no abnormality. An otolaryngologist found no laryngeal abnormality on direct examination. Beta-hemolytic streptococci were isolated from smears from the larynx. In vitro sensitivity tests showed that these were sensitive only to aureomycin and chloramphenicol but resistant to all concentrations of other antibiotics. The x-ray films (fig. 3*A*) showed a complete absence of mandibular deciduous teeth. A generating tooth bud of the mandibular first permanent molar on the left was noted. Deciduous maxillary teeth apparently present were the right first and second molar and the left first molar; the right and left incisors were malformed. No abnormality in the blood cell count or urinalysis was noted.

On the first hospital day, before the diagnosis had been made, the child's temperature went to 103 F, rectally, but returned to normal later in the day. The child's room was kept at 68 F for the next three days and the temperature remained normal. On the fourth day, approximately one-fourth of the child's surface was painted with a 0.5% iodine solution. Starch powder was then applied to these areas. The room temperature was purposely elevated to 95 F. Within 90 minutes the child's temperature became 102.5 F rectally. There was no evidence of sweating in any area covered by the starch-iodine indicator system. The fever subsided over a two-hour period after the environmental temperature returned to normal. A final diagnosis of ectodermal dysplasia of the anhidrotic type was made (fig. 3*B*).

COMMENT

The long hospitalization of this patient afforded the opportunity to note fluctuations of the daily temperature and correlate these with the environmental temperatures during the summer months (fig. 4). It was observed that when the environmental temperature exceeded 90 F, the rectal temperature of the patient exceeded 102 F for that day. There are other factors that may have influenced the body temperatures, such as painful diagnostic procedures that caused crying and increased body activity, but, in general, the correlation with environmental temperature was very close. The temperature spikes with abrupt falls to normal seen in this patient are not characteristic of temperature increases due to a recurrent infectious process. The drops in the temperature in this case were usually attributed to the effect of an antibiotic. Some similar cases have been studied for long periods with the true diagnosis not reached until adult life.

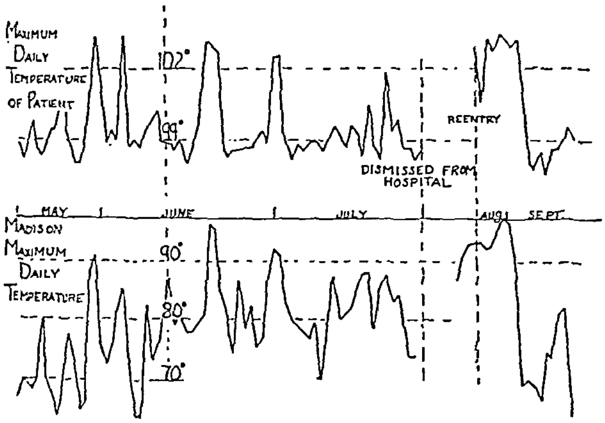

Fig. 4.—Correlation between fever and environmental temperature in case of infant with ectodermal dysplasia.

In one instance, because of a positive Mantoux test associated with an irregular temperature, a boy was advised to enter a sanatorium for the treatment of tuberculosis. The temperature irregularity of persons with ectodermal dysplasia has been studied; the rapid response to temperature of the surroundings has been noted by others and has been mentioned in most reports of this disorder. Sunderman [1] has reviewed temperature phenomena caused by the absence of sweat glands. It is difficult to prove a total absence of sweat glands. In the case reported, there was not sufficient moisture produced in a heated room to activate the starch–iodine test, which was easily exhibited by normal individuals exposed to the same temperature conditions.

This child also presented symptoms of laryngitis, which, in addition to the fever, were the only findings suggestive of an infectious process. It is, noted that symptoms of chronic rhinitis and laryngitis have been reported in other cases of ectodermal dysplasia of the anhidrotic type. In one case reported by Upshaw and Montgomery,[2] these symptoms were severe enough to necessitate a tracheotomy. The hoarseness and laryngitis may be due to a deficiency in the secretory functions of the glands of the mucous membranes of the nose and throat. However, the drying effect on the mucous membranes by the frequent high temperatures and associated rapid respirations may also aid in producing these symptoms. The peculiar wrinkling of the skin about the eyes may give the first clue to the underlying ectodermal defect in younger children. The skin is more than usually sensitive to irritants, and the mild eczema that this child had is typical of most cases.

The care of these children is directed to the control of the pyrexia by sponging or moistening the clothing in hot weather. Persons with this disease can never attempt to do heavy work during hot weather. The frequent upper respiratory infections often require professional treatment. Dental care is also necessary early, because of the absence or irregularity of the teeth, which may interfere with proper nutrition and facial growth. The development of the facial growth of one such patient, who was fitted with dentures at the age of 6, has been described by Sarnet and co-workers.[3] They have noted that the facial bones seem more fragile than normal. Abnormal dentition is one of the characteristic features of this syndrome with either total absence of teeth or the presence of peg-like structures, as noted in this child. The atrophic alveolar process associated with thickened lips and a saddle nose causes persons with this syndrome to have a striking resemblance to each other. Although this condition is known to be familial, no family history of any similar disorder was obtained in this patient.

921 16th Ave. (Dr. Stiles).

1. Sunderman, F. W.: Persons Lacking Sweat Glands: Hereditary Ectodermal Dysplasia of the Anhidrotic Type, Arch. Int. Med. **67**: 846 (April) 1941.

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Enzyme Treatment of Wounds.—The use of depolymerases of streptodornase in the treatment of infected wounds has produced faster healing than has occurred in similar wounds not treated with the enzymes. The digestion of desoxyribonucleoprotein and desoxyribonucleic acid has not produced substances which are toxic or detrimental to the healing of wounds. The depolymerases of streptodornase, by their enzymatic properties, effect the digestion of desoxyribonucleoprotein and desoxyribonucleic acid, when the compound can be brought into direct contact with pus for a sufficiently long period. The digestion of pus by the depolymerases of streptodornase and the removal of the pus facilitates the formation of healthy granulation tissue and the earlier healing of infected wounds.—J. M. Miller, M.D.; M. Ginsberg, M.D.; J. A. Surmonte, M.D.; F. B. Ablondi, A.B., and J. H. Mowat, Ph.D., Clinical Use of the Depolymerases of Streptodornase, *United States Armed Forces Medical Journal*, July, 1955.

POSTOPERATIVE RECURRENCE OF CANCER OF COLON DUE TO DESQUAMATED MALIGNANT CELLS

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and
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The dissemination of cancer during operative resection is a problem of fundamental importance and one that has occupied the attention of surgeons for generations. The principles of meticulous handling of tissues and en bloc resection were established early in the modern surgical era and rapidly applied to the resection of all somatic neoplasms. Such techniques, however, are not readily applicable to visceral neoplasms, particularly those of the gastrointestinal tract, where greater attention has been paid to permeation along lymphatic channels than to the possible local implantation of viable cancer cells. In a recent review of suture line recurrences after anterior resection of the rectum, Goligher and associates[1] analyzed 23 cases, 16 from a series of 162, or 10%, and 7 additional cases from other sources. They concluded that in at least half of these 23 cases the recurrence was not due to incomplete resection of intramurally spread tumor but rather to the implantation of viable cancer cells lying free in the lumen of the distal rectal stump upon the raw surfaces of colon presenting at the anastomosis. That this phenomenon is not peculiar to the operation of anterior resection but occurs in resections elsewhere in the colon was demonstrated in two additional patients, in one of whom a resection of the splenic flexure was done and in the other a colectomy and ileosigmoidostomy.

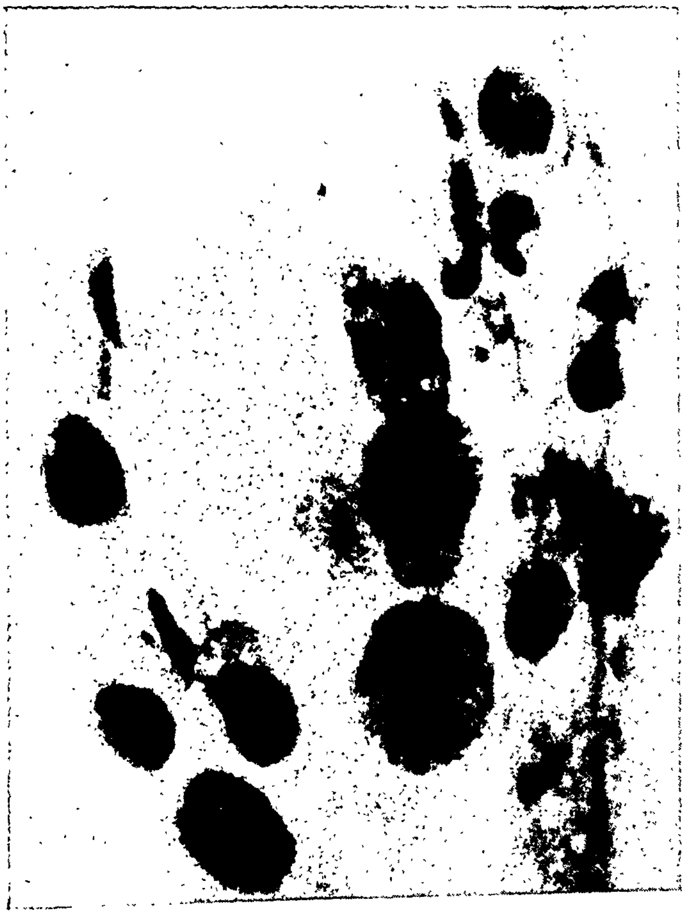

Fig. 1.—High-power photomicrograph of malignant cells obtained by use of simple smear technique. Large hyperchromatic nuclei with multiple large nucleoli and poorly defined cytoplasm are seen in center and normal serosal cells at top and below.

The recent work of McGrew and associates[2] establishes the probable way this process works. By the use of cytological techniques it was demonstrated that well-preserved and apparently viable malignant cells were present in smears of 42% of the proximal ends and 65% of the distal ends of the resected colons at average distances from the tumors of 21 cm. and 10 cm., respectively, and at 35 cm. from the tumor in one instance. The evidence further indicated that dissemination of the malignant cells occurred as a result of operative manipulation and not by peristalsis or preoperative enemas. McGrew and associates therefore advocated the use of occlusive ligatures around the colon, proximal and distal to the tumor, before any manipulation and resection of the tumor-bearing segment of the colon was begun. The conclusive results of this study leave little doubt as to the mechanism of suture line recurrence.

In recent years we have encountered several cases of recurrent tumor nodules that appeared in the abdominal wounds of patients who had undergone colon resection for carcinoma. A similar occurrence was noted in one of the cases reported by Goligher. The nodules appear at varying intervals after surgery. The most recent recurrence we have observed appeared 11 months after ileocolic resection for a tumor of the hepatic flexure. The nodules may reach a size of several centimeters in diameter, are entirely confined to the abdominal wall, and are in no way continuous with the viscera or with other intraperitoneal recurrences that may have appeared. That these recurrent nodules are the result of lymphatic permeation seems unlikely, since they do not lie in the course of any of the established lymph channels of the colon. On this service great care is exerted to isolate and pack off the segment of colon to be resected from the time of transection of the colon to completion of the anastomosis so that implantation of cells from the lumen of the colon seems unlikely.

Direct invasion through the full thickness of the antimesenteric walls of the colon and involvement of the subserosal lymphatics is a common occurrence in carcinoma of this organ. These nests of malignant cells are in turn covered by no more than a solitary layer of serosal cells. It has been the belief of one of us (J. H. G.) for some time that viable malignant cells can be rubbed off the serosal aspect of colonic neoplasms during operative manipulation, not only by relatively rough gauze pads and sponges but also by the surgeon's gloves. That it is relatively simple to dislodge the serosal cell barrier and also malignant cells is demonstrated in the results described below. If this is accepted, then it is not difficult to visualize the implantation of these malignant cells into the relatively unprotected abdominal wall, a tissue-culture medium equally as fine as the raw edges of the transected colon of an anastomosis.

From the Surgical Service of the Mount Sinai Hospital.
Dr. Louis Lapid and Miss Rita Chergoff assisted in this study.

[1] Goligher, J. C.; Dukes, C. E., and Bussey, H. J. R.: Local Recurrences After Sphincter-Saving Excisions for Carcinoma of the Rectum and Rectosigmoid, Brit. J. Surg. **39:** 199 (Nov.) 1951.

[2] McGrew, E. A.; Laws, J. F., and Cole, W. H.: Free Malignant Cells in Relation to Recurrence of Carcinoma of the Colon, J. A. M. A. **154:** 1251 (April 10) 1954.

TECHNIQUES

An effort was made to recover desquamated cells in much the same manner that they might be mechanically dislodged during surgery. Smears were taken from the serosal aspect of the colonic tumor as soon as the peritoneal cavity was entered and before any manipulation of the tumor was carried out. Smears were taken by two methods: 1. One end of a glass slide was pressed to the surface of the tumor and gently pulled across its surface to the full extent of the slide. 2. Sterile, cotton-tipped applicators were rubbed across the tumor in a fashion simulating a gauze sponge. In this latter technique the cotton tips were gently rolled across glass slides in an effort to minimize further trauma to the cells. Two of each type of smear, four in all, were taken for each tumor. The slides were immediately prepared by the use of the Papanicolaou technique [3] and carefully studied for malignant cells.

Fig. 2.—Malignant cells from same tumor as figure 1, recovered by cotton-tipped applicator and transferred to a glass slide.

RESULTS

In the past two years smears were taken from 20 unselected cases of carcinoma of the colon coming to surgery. The tumors studied were located in all sections of the colon and invariably had invaded the full thickness of wall, producing the characteristic puckered serosal surface. Unmistakable carcinoma cells were recovered from two tumors (10%), both of the sigmoid colon. In one, a positive smear was obtained only by use of the slide-smear technique, while in the second a positive slide was obtained by use of both the smear and the cotton-tipped applicator techniques. In general the cotton applicator method gave poorer slides where considerable cell destruction was encountered. It was surprising, indeed, to note the large plaques of well-preserved serosal cells so readily removed by simply running a clean, dry slide across the tumor.

As in the experience of McGrew and associates the cytoplasm of the malignant cells we recovered was poorly outlined or absent. The nuclei, however, were well preserved and conformed well to the criteria for malignancy outlined by Papanicolaou, viz., disproportionate nuclear enlargement, hyperchromasia and chromatin abnormalities, giant nucleoli, and multinucleation. No abnormal mitoses were encountered. Although malignant cells were infrequent on any one slide, they were found in small clusters (fig. 1 and 2) and compared closely with published examples from similar tumors.[4]

COMMENT

It is apparent from this study that malignant cells rubbed free from the serosal aspect of tumors may not only cause abdominal wall recurrences but also represent a grave danger to dissemination and implantation within the peritoneal cavity. In an effort to obviate this hazard, a colon cover was designed, which not only protects the serosal aspect of the tumor from manipulative trauma but also combines the occlusive ligatures at a distance from the tumor, as recommended by McGrew and associates. The covers in present use are modified from ordinary gauze abdominal pads. They are 11 in. long, wider in the center than at the ends, and of sufficient capacity to surround the tumor-bearing portion of colon at the center and the uninvolved part at each end. The center and each end are furnished with a long, heavy silk ligature that is passed through the mesentery immediately adjacent to the colon and then tied snugly around it. Figure 3 illustrates the use of such a cover. Except in very large, bulky tumors it is usually possible to tie the ends around uninvolved colon approximately 4 in. (10 cm.) from the tumor. In freely dependent colon as the sigmoid, the cover is applied as soon as the peritoneal cavity is entered. In other segments it is applied as soon as the lateral peritoneal attachments are severed.

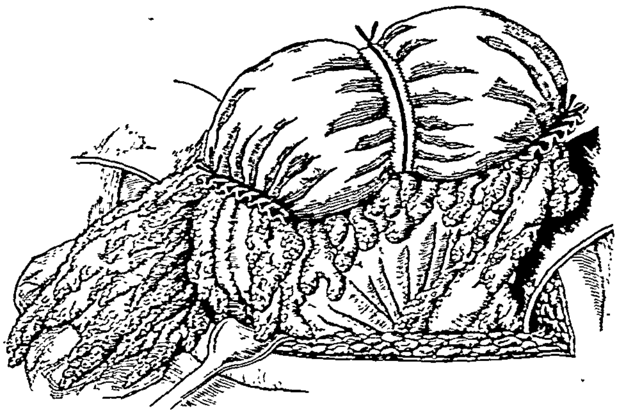

Fig. 3.—Colon cover applied to a tumor of the right transverse colon after incising the gastrocolic ligament.

SUMMARY

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Smears taken from the serosal surfaces of of Cystic
tumors and prepared with the Papanicola Concept, Dis.
have demonstrated that with only sligh ayer, E.: Emphy-
-591 (Sept.) 1954. (c)

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s: Report of Case, Am.
Footnote 1.

3. Papanicolaou, G. N.: Atlas of F Space Abnormalities of Lungs
Mass., Commonwealth Fund, Harvar : 1002-1008 (May) 1955.

4. Footnotes 2 and 3.

is possible to loosen and set free apparently viable malignant cells. Such desquamated cells are considered the source of abdominal wound recurrences after colonic resection for carcinoma. They are also thought to represent a possible source of some intraperitoneal recurrences. A colon cover has been developed that not only protects the serosal aspect of the tumor from trauma but also allows the use of occlusive ligatures at a distance from the tumor.

3 E. 73rd St. (21) (Dr. Garlock).

CHEMOTHERAPY AND "VANISHING LUNGS"

Israel Rappaport, M.D., New York

An unsuspected relationship between chemotherapy and "vanishing lungs" is now attracting much attention in centers devoted to treatment of pulmonary diseases. Perhaps the simplest way of describing this phenomenon is to say that pulmonary processes resolving under the effect of chemotherapy leave in their wake thin-walled abnormal air spaces now commonly designated as "cyst-like cavities." These have also been described as "vanishing lungs," a truly descriptive name. This remarkable phenomenon has been reported from many places and described uniformly as a new development in pulmonary pathology, raising questions of practical as well as theoretical nature. Practically, are we dealing with a new development? I definitely believe not. Even before chemotherapy was practiced, numerous observations were reported of vanishing lung areas affected by a variety of pulmonary processes; however, there is no doubt but that the incidence has greatly increased in recent years. It has also become apparent that more complete resolution of pathological products in the lungs, with chemotherapy, is in some manner connected with this phenomenon. In a recent review of this subject, Mayer and myself [1] pointed to the rising incidence of air space abnormalities with the advent of chemotherapy.

In abscesses as well as in tuberculosis, confluent extensive processes as a rule result either in thick-walled cavities or in dense fibrosis. Now, chemotherapy often

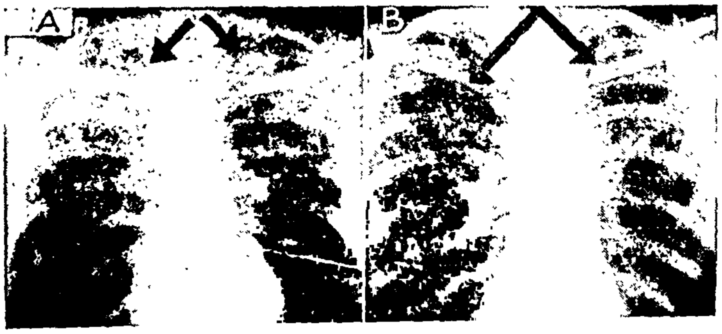

Fig. 1.—Roentgenograms of tuberculous patient, a man in his late 20's. arch, 1950, extensive lesions in both upper lobes are shown. *B*, in 1954, tuberculous lesions resolved in both lungs are replaced anished lung.

resolution before any of these
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processes in the predominantly exudative phase. Cyst-like cavities have been observed to develop particularly in patients with such processes.

CLINICAL AND MORPHOLOGICAL FINDINGS

In pulmonary tuberculosis, the cavity has always been a practical clinical problem of great concern; it is therefore only natural that cyst-like cavities, appearing upon

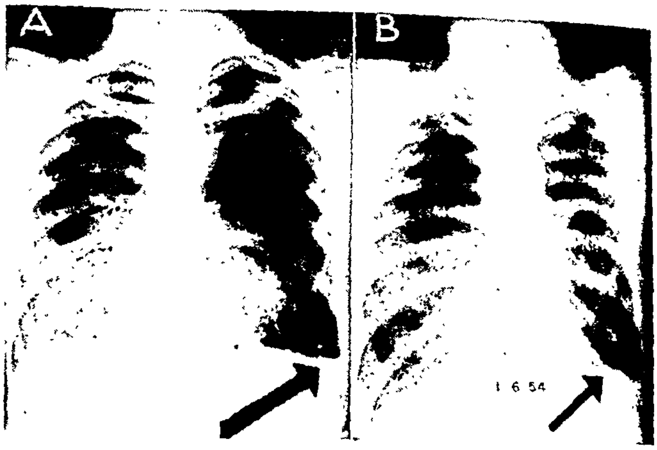

Fig. 2.—Roentgenograms of man in late 30's with marked features of vanishing lungs. *A*, in June, 1953, a large pneumatocele in base of left lung with fluid level shown. *B*, in January, 1954, reversibility of condition with reexpansion of compressed lung areas is shown.

resolution of tuberculous processes, are now causing much concern. The immediate question is that of their clinical significance. Are the bearers of such residual cyst-like cavities cured or not cured of their disease? Answers to these questions are now sought from clinical follow-up of patients and from morphological studies of surgical specimens. Clinical observations indicate that in a large proportion of cases these abnormal air spaces show marked reversibility. They may even become completely deflated after a long state of hyperinflation or revert to the status of typical tuberculous cavities. In many cases the status of vanishing lung develops and persists. Morphological findings include evidence for so-called open healing of tuberculous cavities as well as evidence of truly emphysematous air spaces. The former are more or less characterized by reepithelialization from the broncho-cavity junction; the latter show continuous fibrosis tissue lining without epithelialized or necrotic parts. Both types of airspaces may be found next to one another in the same specimen. Morphological evidence for bronchial obstruction is conspicuously absent in these specimens.

From these observations it is apparent that in tuberculous processes healing under chemotherapy, two distinct types of abnormal air spaces develop. Presumably, in an already caseated lesion, open healing of more or less completely sterilized cavities occurs. Emphysematous changes resulting in vanishing lungs seem to occur particularly in healing of lesions not yet caseated. Reversible hyperinflation is undoubtedly best accounted for by bronchial obstruction. This has led to the assumption that bronchial obstruction accounts for all the air space abnormalities observed in the healing of tuberculous processes under the effect of chemotherapy. Air space abnormalities that develop under clinical observations are practically always looked upon as forms of obstructive emphysema, despite the fact that there is no evidence for the presence of bronchial obstruction at the

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beginning of the emphysematous process and that there is ample evidence against it as playing the main role even in the subsequent evolution of emphysematous changes.[1] It will bear repetition at this point to say that, in recent large-scale observations, the morphological findings have also failed to produce evidence for bronchial obstruction. Although reversible hyperinflation of abnormal air spaces indicates that bronchial obstruction plays a role in the changing state of inflation, it affords no proof of its being the primary event and sole cause of the phenomena of vanishing lungs. As the sequence of events in reversible hyperinflation is now observed in a great number of cases, the conclusion seems inescapable that inflammatory processes, even when not necrotizing in their effects, may yet damage the ultimate structures in the affected lung areas so as to cause their apparent disintegration and subsequent absorption together with the pathological products. Chemotherapy, by preventing development of dense fibrotic residues and by favoring more complete self-cleansing of the affected area, has made this phenomenon conspicuous now.

NATURE AND ORIGIN OF AIR SPACE ABNORMALITIES

The fundamental problem is obviously that of the nature of the primary phenomenon in vanishing lungs, which is now submerged in the broad problem complex of the nature and origin of pulmonary emphysema, in general. As I have pointed out in recent publications,[1a] it is now widely realized that prevailing concepts about obstructive emphysema do not afford an adequate solution for the problem of emphysema. The problem of the vanishing lung under the effect of chemotherapy in tuberculosis remains to be solved. On the basis of a new concept of lung function proposed by me [2] nearly two decades ago, I offered reasonable explanations of the nature and origin of air space abnormalities, as they are now observed under a variety of clinical conditions. Referring to recent publications [3] for the detailed discussion of the nature and origin of these abnormalities, I would like to comment on the following points. The phenomenon of vanishing of affected lung areas has been predicted as implicit in the concept of visceral lung function, which assumes that breathing surface creation, by partitioning of the air spaces, and their constant self-cleansing constitute the activities of the ultimate lung structures. These twin functions are so correlated that, where partitioning ceases, the structures disappear in the continuous self-cleansing process that maintains the breathing surface intact. In any lung area, visceral function may be inadequate because of defective postnatal development, or it may become defective due to subsequent changes, pathological or involutional. Normal thoracic traction acting upon such defective air spaces, lacking adequate partitioning function by the parenchyma, will overdistend these to the point of failing elastic recoil. Air spaces so overdistended constitute what we recognize as emphysema, in the origin of which the primary factor is the "lung defect." The nature of this varies according to the three phases of life. In early life the lung defect is mostly "developmental" in origin.[3a] During adult life lung defects are "acquired" by a great variety of pathological processes.[1] In old age emphysema develops on the basis of the "involutional" lung defect.[3b] Combinations of these lung defects frequently play a role in the pathogenesis of vanishing lungs. After childhood, in many cases, development of the acquired defect is favored and exaggerated because the pathological process, such as tuberculosis or abscess, has involved lung area already previously affected by latent developmental defect. Senile emphysema often develops because the involutional defect is exaggerated by preexisting acquired lung defects.[3b]

The manner in which air space disorder and the picture of vanishing lungs develop on the basis of emphysema complicated by air passage obstruction becomes quite obvious from the foregoing. The very nature of the process by which emphysema is produced leads secondarily to bronchial obstruction, with check valve mechanism and reversible hyperinflation of already abnormal air spaces. It should also be quite obvious that lungs harboring abnormal air spaces will naturally predispose to complicating infections, which may also often lead to secondary bronchial obstruction and its sequelae. Incomplete bronchial obstruction will exaggerate the air space abnormality and result in large bullae or air cysts. Complete obstruction accounts for reversal or occasional complete disappearance of abnormal air spaces. The literature is replete with reports on observations of both sequences of events. While vanishing of lung areas upon resolution of tuberculous processes is now a common observation, less common is the observation of tuberculous processes appearing in previously vanished lung areas, leading to reversal of the sequence of events. Recently, observation of the occurrence of the latter also has been reported. As an example of the first sequence of events, figure 1 shows the resolution of tuberculous lesions resulting in vanishing lungs; figure 2 illustrates the second sequence of events, showing disappearance of a large hyperinflated air space, upon resolution of a complicating infection, as indicated by fluid level. My observations lead me to believe that the infectious process that was originally responsible for the development of vanishing lungs may persist and relapse in the bronchi even after long intervals. This is probably true particularly for tuberculous processes.

Regarding the treatment of cyst-like cavities, practical conclusions to be drawn from the foregoing should be obvious. Radical surgical resection is indicated whenever feasible, as cyst-like cavities of known tuberculous origin are potential sources of flare-up in a large proportion of cases. Vanishing lung areas are potential sites for progressive air space disorders, with all the dangerous complications of progressive pulmonary failure, as recently described in my discussion of that subject.[4] It seems a measure of sound prevention to deal with such air space abnormalities before they progress very far.

[1a] Footnote 3*a* and *b*.

[2] Rappaport, I.: Problem of Visceral Function of Lungs, Dis. Chest **25**: 1-14 (Jan.) 1954.

[3] (*a*) Mayer, E., and Rappaport, I.: Developmental Origin of Cystic Bronchiectatic and Emphysematous Changes in Lungs: New Concept, Dis. Chest **21**: 146-160 (Feb.) 1952. (*b*) Rappaport, I., and Mayer, E.: Emphysema and Senile Lung, *J. Am. Geriatrics Soc.* **2**: 581-591 (Sept.) 1954. (*c*) Erler, S.: Lung Cyst Infected by M. Tuberculosis: Report of Case, Am. Rev. Tuberc. **69**: 1037-1041 (June) 1954. (*d*) Footnote 1.

[4] Rappaport, I., and Mayer, E.: *Air Space Abnormalities of Lungs* (Air Space Disorder), Am. J. Surg. **89**: 1002-1008 (May) 1955.

SUMMARY

The phenomenon of "vanishing lung" is now commonly observed upon resolution of disease processes in the lungs under the effect of chemotherapy. Most of these observations are now made in cases of pulmonary tuberculosis in predominantly exudative processes, when streptomycin and particularly isoniazid prevent caseation as well as dense fibrosis and promote more complete resolution of pathological products.✓ The current trend is to explain this as a phenomenon of obstructive emphysema, in spite of the fact that there is neither clinical evidence of bronchial obstruction before its development nor evidence for such obstruction in the subsequent morphological findings. The point is made here that this puzzling phenomenon must be explained on the basis of a solution of the broad problem complex of pulmonary emphysema. It is now widely realized that the concept of obstructive emphysema does not afford an adequate solution for the phenomena of pulmonary emphysema in general. The vanishing lung phenomenon is implicit in a new concept of lung function. It seems to offer a reasonable explanation of the nature and origin of pulmonary emphysema.

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ROLE OF SURGERY IN THERAPY OF ADRENOCORTICAL HYPERSECRETION

Harry H. LeVeen, M.D.
and
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In the female, hirsutism is common to both adrenocortical hyperfunction (Cushing's syndrome) and the adrenogenital syndrome. In the latter, virilism, slight obesity, and nitrogen retention are additional outstanding features. The virilism is manifest by voice changes, darkening of the skin, increased muscularity, hypertrophy of the clitoris, growth of a beard, occasionally male type of baldness, atrophy of the breasts, amenorrhea, and uterine and ovarian atrophy. Patients with adrenogenital syndrome usually do not exhibit those changes that occur with adrenocortical hyperfunction. These are hypertension, truncal and facial obesity, carbohydrate intolerance, osteoporosis, purplish striae, alterations in sodium-potassium ratio in the serum, and alterations in endogenous protein metabolism as evidenced by changes in uric acid and creatinine excretion. In both of these conditions, the physiological changes may be secondary to benign or malignant cortical tumors that maintain the capacity to secrete hormones. In adrenocortical hyperfunction it is impossible to differentiate between neoplasia and hyperplasia except by some method of anatomic demonstration of the tumor mass. Positive anatomic evidence is valuable in the diagnosis of tumor, but negative evidence does not exclude it. In adrenogenital syndrome, a functional test to be described can be used to distinguish tumor from hyperplasia. In other cases, neoplasm is not present and the anatomic physiological abnormalities are produced by cortical hyperplasia and hypersecretion. Most often the hyperplasia and hypersecretion are intrinsic disturbances of the adrenal gland itself, but in some cases they are secondary to a high output of corticotropin from a basophil adenoma of the pituitary.

In adrenocortical hyperfunction of primary origin, the overproduction of cortical hormones inhibits the pituitary gland, and hyalinization of the basophil cells results. This change was first described by Crooke.[1] Similar changes in the pituitary can be produced by injection of large doses of cortisone or corticotropin in experimental animals.[2] They have also been found in humans who have died in the course of therapy with corticotropin or cortisone.[3] One must conclude that adrenal steroid hormones in the circulating blood inhibit the basophil cells of the pituitary. This is true whether the steroid hormone is injected or endogenously produced as is the case when the adrenal cortex is stimulated by corticotropin. The excessive production of cortisone-like hormones by the hyperplastic gland causes an increase in the primary excretion of 11-oxycorticosteroid-like substances.[4] The urinary output of corticoids as measured by the formaldehydogenic method is usually increased.[5] Rarely is the urinary 17-ketosteroid output elevated.[6] Masculinization, which is a physiological effect of 17-ketosteroid action, is not prominent in the usual case of adrenocortical hyperfunction.

In adrenocortical hyperfunction of primary adrenal origin, the hyperplasia and hypersecretion of the adrenal gland are unexplainable; but the hyperplasia occurring with adrenogenital syndrome is understandable. Cortical cells may synthesize hydroxycortisone via many pathways, of which at least two may account for a good proportion of the biosynthesis. It may be formed directly from the ketosteroid (dehydroepiandrosterone), which is a masculinizing hormone,[6A] or it may be formed from 17-hydroxyprogesterone, which is rapidly converted to ketosteroid in the body and is therefore masculinizing. In other words, hydroxycortisone may be formed from a ketosteroid or a precursor in common.[6B] It is believed that in adrenogenital syndrome the necessary enzyme for this conversion is absent.[7] A deficiency in circulating hydroxycortisone occurs with a consequence that the normal inhibitory action of this hormone on the pituitary is lost. The pituitary responds by producing excessive quantities of corticotropin.[8] The adrenal is capable of responding to this corticotropin only

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Dr. LeVeen is now at the Department of Surgery, Chicago Medical School, Chicago.

[1] Crooke, A. C.: A Change in the Basophil Cells of the Pituitary *Gland Common to Conditions Which Exhibit the Syndrome* Attributed to Basophil Adenoma, J. Path. & Bact. **41**: 339, 1935.

[2] Golden, A., and Bondy, P. K.: Cytologic Changes in Rat Adenohypophysis Following Administration of Adrenocorticotrophin of Cortisone, Proc. Soc. Exper. Biol. & Med. **79**: 252, 1952.

[3] Laqueur, G. L.: The Human Hypophysis in Diseases of the Adrenal Cortex, Stanford M. Bull. **9**: 75, 1951.

[4] Talbot, N. B., and others: The Excretion of 11-Oxycorticosteroid-Like Substances by Normal and Abnormal Subjects, J. Clin. Endocrinol. **7**: 331, 1947.

[5] Knowlton, A. I.: Cushing's Syndrome, Bull. New York Acad. Med. **29**: 441, 1953.

[6] (*a*) Soffer, L. J., and Gabrilove, I. L.: Diseases of the Endocrine Glands, Philadelphia, Lea & Febiger, 1951, p. 358. (*b*) Knowlton.[5]

[6A] Hechter, O.: Biogenesis of Adrenal Cortical Hormones, in Ciba Foundation Colloquia on Endocrinology, vol. 7, Boston, Little, Brown & Company, 1953.

[6B] Lieberman, S., and Teich, S.: Recent Trends in the Biochemistry of the Steroid Hormones, Pharmacol. Rev. **5**: 285, 1953.

[7] Jailer, J. W.: Virilism, Bull. New York Acad. Med. **29**: 377, 1953.

[8] Sydnor, K. L., and others: Blood Adrenocorticotropin in Children with Congenital Adrenal Hyperplasia, Proc. Soc. Exper. Biol. & Med. **82**: 695, 1953.

by the production of 17-ketosteroids, since the conversion to hydroxycortisone cannot be completed without the missing enzyme. Large quantities of 17-ketosteroid hormones now circulate in the blood and appear in the urine, but the excretion of 11-hydroxysteroids is reduced. The androgenic activity of the 17-ketosteroids causes masculinization. The sugar intolerance and other stigmas of adrenocortical hyperfunction do not appear because of the deficiency in hydroxycortisone. In these cases of adrenogenital syndrome, cortisone administration causes the 17-ketosteroid output to drop precipitously and the masculinization to disappear.[9] This result occurs by supplying the missing hormone.

Occasionally a small basophil adenoma of the pituitary produces corticotropin in excess and secondarily induces adrenocortical hyperfunction. Since these tumors are small, they usually do not produce neurological, visual, or other objective changes. The absence of objective findings makes it impossible to distinguish primary from secondary hyperplasia without a clinical test for circulating corticotropin. Unfortunately, a simple clinical test does not exist. Since one cannot distinguish between primary and secondary types of adrenal hyperplasia, many feel uncertain of the role of adrenal resection in the treatment of adrenocortical hyperfunction and prefer radiation of the pituitary. Even so, the literature does contain favorable reports on adrenal resection in this disease.[10]

Those cases of pure adrenogenital syndrome that respond fairly well to cortisone should be so treated, but what about those that do not respond favorably? More recently, Jailer has demonstrated that the normal secretion of neoplasms (both benign and malignant) is autonomous and is unaffected by corticotropin.[10a] The inhibition of endogenous corticotropin production (which is brought about by the injection of cortisone) does not bring about any reduction in the production of hormones by the tumor. In neoplasms, the urinary 17-ketosteroid output fails to drop after the administration of cortisone. This forms the basis for a test to distinguish between tumor and hyperplasia. Surgical therapy is naturally indicated only in cases of tumor.

The adrenogenital syndrome and adrenocortical hyperfunction have been discussed as if they were two separate entities, but occasionally the features are so intermingled that one is hard put to classify the disturbance. Is such a classification useful? One naturally suspects that the admixture of the two syndromes would make for confusion and preclude a satisfactory explanation for the pathogenesis in either condition. What role does the laboratory play in the diagnosis and differentiation of these symptoms? What role does surgery play in the therapy of these conditions? A case is reported that to outward appearances was one of adrenogenital syndrome. This unusual crossover case has contributed greatly to the understanding and management of these two syndromes and has provided solutions to the questions that have just been raised.

REPORT OF A CASE

This patient was a 27-year-old married woman who had originally consulted physicians with a complaint of amenorrhea. Since 1945, she had had scanty menses and finally, in 1952, amenorrhea. On several occasions, vaginal bleeding had been produced with cyclic therapy. In October, 1952, an endometrial biopsy revealed focal cystic hyperplasia, but no secretory activity. Her basal metabolic rate in October, 1953, was +8% and her blood cell count normal. She was first seen by us in April, 1953. She had no vaginal discharge, no abdominal pain, and no dyspareunia but did complain of a loss of libido. There were no voice changes. She had been gaining weight during the past year. A systemic review was normal. Her mother died of carcinoma of the uterus in her late 30's. There were no other children.

Physical Examination.—The patient was a 5 ft. 4 in. (162.56 cm.) white female, weighing 129.5 lb. (58.7 kg.) but not appearing acutely or chronically ill. The facies were slightly moon-shaped, and there was an increase in lanugo-like facial hair. The skin was not florid. There were coarse hairs in the region of the chin and on the upper lip. The voice was not deepened. The pupils were equal and reacted to light. The fundi were normal. The pharynx was pink, and the teeth were in good repair. There were few palpable cervical lymph nodes; the thyroid was not palpable. The breasts were normal, with no apparent striae. Lungs were clear to percussion and auscultation. The blood pressure was 160/110 mm. Hg. A regular sinus rhythm was heard, and the point of maximal impulse was at the fifth intercostal space at the midclavicular line. There were no thrills or murmurs, and the sounds were of good quality; the aortic second sound was greater than the pulmonic second sound. There were no abdominal striae. The liver, spleen, and kidney were not palpable, and there were no masses. The external genitalia were normal; there was no hypertrophy of the clitoris. The pelvic examination showed a very small anterior uterus with normal adnexae and cervix. The extremities were normal and showed no edema. Rectal examination was also negative. The hemoglobin was 15.5 gm. Sweat sodium concentration was 77 mEq. per liter (normal for our method in winter, 90 to 110 mEq. per liter).

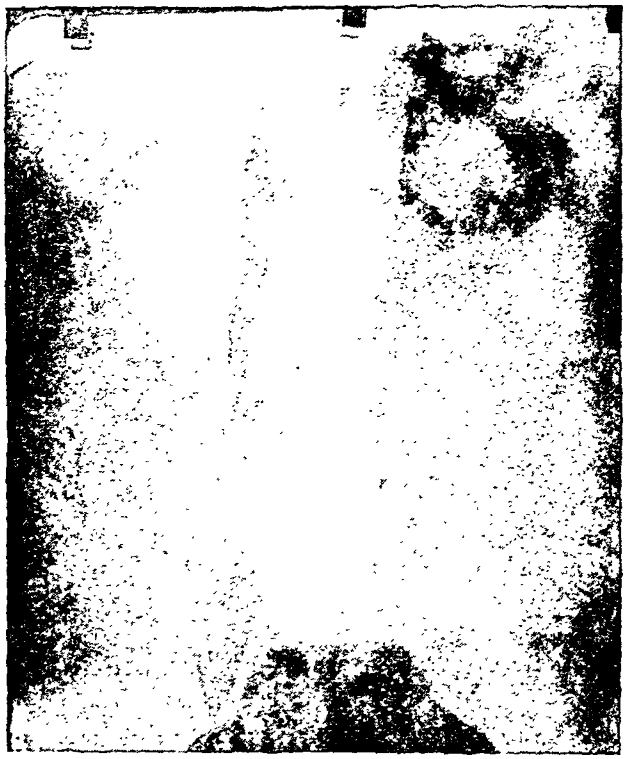

Fig. 1.—Simultaneous intravenous pyelogram and retroperitoneal air insufflation showing questionably enlarged left adrenal but no tumor masses.

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[9] Soffer.[6a] Sydnor and others.[8]

[10] Sprague, R. G.; Kvale, W. F., and Priestly, J. T.: Management of Certain Hyperfunctioning Lesions of the Adrenal Cortex and Medulla, J. A. M. A. 151:629 (Feb. 21) 1953.

[10a] Jailer, J. W.; Gold, J. J., and Wallace, E. Z.: Evaluation of the "Cortisone Test" as a Diagnostic Aid in Differentiating Adrenal Hyperplasia from Adrenal Neoplasia, Am. J. Med. 16:340, 1954.

The urine was normal. A glucose tolerance test showed, at the start, 78 mg.; in 30 minutes, 146 mg.; in 60 minutes, 94 mg.; in 90 minutes, 88 mg.; and in 120 minutes, 81 mg. An insulin tolerance test (0.1 mg. per kilogram of body weight) showed at the start, 94 mg.; at 30 minutes, 59; at one hour, 42; and one and a half hours, 75; and at two hours, 94. The 17-ketosteroid determination showed 31.5 mg. for 24 hours (normal, 6 to 15 mg.). An x-ray of the skull and bones was negative. There was no osteoporosis. The visual fields were normal.

Course.—The patient's blood pressure over a period of four months remained elevated, reaching as high as 200/110 mm. Hg. The hirsutism and truncal and facial obesity became more marked. The patient was given cortisone therapy with the tentative diagnosis of adrenogenital syndrome. She was given 12.5 mg. of cortisone four times a day. The 17-ketosteroid level with this therapy stayed at 39 mg. per 24 hours. The fact that the 17-ketosteroid level was not influenced by this therapy suggested that an adrenal tumor might exist. Another test for 17-ketosteroid excretion showed 40.3 mg. The patient was then placed on a high dosage of cortisone intramuscularly for one week, 100 mg. per day. Before discontinuance of cortisone therapy, the 17-ketosteroid excretion was again tested and was found to be 30.6 mg. Although this was a slight drop, it was thought that the patient had an adrenogenital syndrome secondary to an adrenal tumor. A retroperitoneal air insufflation was done but did not confirm the presence of any sizable tumor (fig. 1).

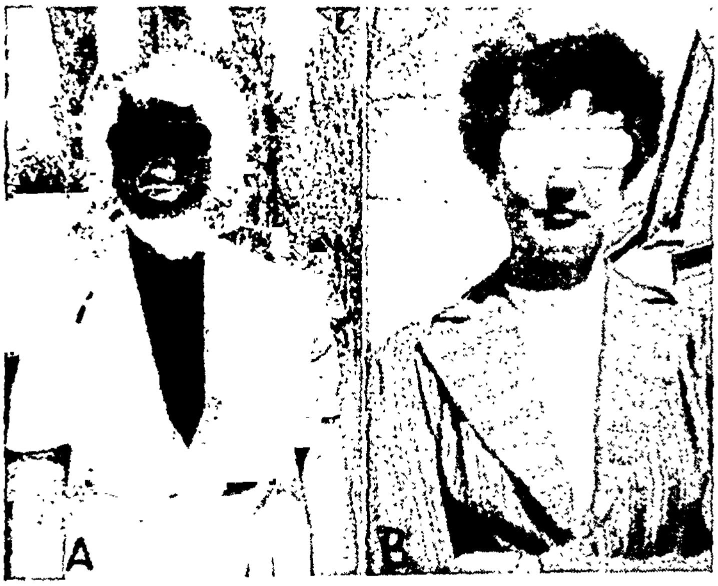

Fig. 2.—*A*, Preoperative photograph of patient in case reported showing moon-shaped facies and hirsutism. *B*, three and a half months after operation, showing loss of facial adiposity and hair.

The patient was prepared for two days preoperatively with cortisone according to the method used by Bergenstal and Dao.[11] On Nov. 9, 1953, both adrenal glands were explored and no tumor was disclosed. Both glands appeared slightly larger than normal, the left being much larger than the right. The abdominal cavity was likewise explored. The uterus and ovaries were found to be extremely atrophic. In addition, a few small omental cysts were found that proved on pathological examination to be dilated lymphatics. The adrenals were subtotally resected on both sides, leaving approximately a 1 cc. portion on each of the sides. The weight of the resected adrenal was 17.9 gm. on the left and 8.5 gm. on the right (combined weight of over 15 gm. is considered hyperplasia). The pathological diagnosis was hyperplasia of the left adrenal.

Postoperative Course.—The patient made an uneventful recovery, and except for a severe episode of influenza her convalescence was good. The postoperative sweat test showed 98 mEq. per liter, which is considered normal. A Kepler water tolerance test, done postoperatively to make sure that the patient had no adrenal insufficiency, was negative. The postoperativ blood sugar level was 98 mg. per 100 cc. The patient's bloo pressure dropped from levels ranging from 200/110 mm. H preoperatively to 124/84. Her weight dropped from 130 to 11 lb. (59 to 54 kg.) in five months. The hirsutism disappeared Three postoperative 17-ketosteroid determinations were done an were 7.6, 8.7, 6.3 mg. These determinations were done at weekl intervals and showed that there was no evidence of regeneratio and that a satisfactorily functioning residue was left. The trunca and facial obesity disappeared, as shown in the photograph (fig. 2). Patient had spontaneous onset of menses, which starte as spotting on the fifth postoperative day. Since that time sh has had regular menstrual periods, with a normal flow. Her headaches, which were probably secondary to hypertension, di appeared. Her only complaint remained stiffness in her joint which was relieved by salicylates. The sedimentation rate remain normal. The patient has shown no evidence of recurrence on year postoperatively. She became pregnant four months aft surgery but had an early spontaneous abortion.

COMMENT

In this case, the only early manifestation of disorde was mild virilism, amenorrhea, and sterility extendin over a period of several years. There were no early stigmas of adrenocortical hyperfunction, although some appeared later in the progression of her disease. Superficially, the clinical appearance suggested the diagnos of adrenogenital syndrome. This was partially confirme by a high 17-ketosteroid excretion. The fact that th 17-ketosteroid output did not drop after the administr tion of cortisone in adequate dosage suggested the po sibility of a cortical tumor and illustrates an appare shortcoming in the use of this test. In spite of the ou ward appearances, we believe that the patient should b considered as having had adrenocortical hyperfunctio even though she had almost none of the changes that a usually found. The only late stigmas of adrenocortic hyperfunction were hypertension and moon-shape facies.

The formation of hydroxycortisone may be repr sented by the following simple equation.

$$\begin{tikzcd}
 & \textit{17-ketosteroids} \\
\textit{Steroid precursor} \arrow[ur, "k_1"] \arrow[dr, "k_2"'] & \\
 & \text{hydroxycortisone}
\end{tikzcd}$$

The rate of production of 17-ketosteroids will depen upon the rate at which cells transform the precurso (k_1) in the equation. The rate of formation of hydrox cortisone will depend upon the rate of conversion (k_2 in the equation. The production of more precursors tha could be rapidly converted to hydroxycortisone woul cause an excess conversion to ketosteroid. In othe words, the amount of masculinizing ketosteroid that i formed would depend upon the ratio k_1/k_2. With a hig ratio, masculinization would be expected; when the rati is low, minimal virilism, if any, would occur. If hydro cortisone is synthesized directly from ketosteroid (deh droepiandrosterone), the rate of conversion of thi masculinizing hormone would determine whether viri ism would occur. In the male, the same should apply but the tendency may be toward feminization, since th overproduction of adrenal hormones inhibits the pituitary sufficiently to depress the pituitary output of gonadotrophin. This results in reduced output of mal sex hormone by the testes.[12]

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[11] Bergenstal, D. M., and Dao, T. L. Y.: Management of Addison's Disease in Adrenalectomized Patients, Bull. New York Acad. Med. 29: 295, 1953.

[12] Wilkins, L., and others: Further Studies on Treatment of Congenital Adrenal Hyperplasia with Cortisone: Effects of Cortisone on Sexual and Somatic Development, with Hypothesis Concerning Mechanism of Feminization, J. Clin. Endocrinol. 12: 277, 1952.

A distinction may be made between the two conditions. A female patient even with virilism should be considered to have adrenocortical hyperfunction if she partakes of any of the clinical features of this disease. The converse is also true. A patient with pure adrenogenital syndrome cannot exhibit any of the clinical features of adrenocortical hyperfunction. It is evident that a patient with adrenocortical hyperfunction might have mixed findings, but an adrenogenital syndrome must be a pure syndrome. Adrenocortical hyperfunction should be treated by adrenal resection along with those cases of adrenogenital syndrome that do not respond to cortisone.

The present status of adrenal gland resection should no longer be a point of disagreement. Adrenocortical hyperfunction is a rapidly fatal disease with an ultimate average prognosis of five years from the onset of symptoms.[13] On the other hand, adrenocortical hypofunction (Addison's disease) induced by the relatively simple and nonlethal surgical extirpation of the adrenal glands is proving to be a mild and easily manageable disease even in elderly debilitated patients. Therapy in adrenocortical hyperfunction may be likened to surgical therapy in hyperthyroidism. Some cases of hyperthyroidism are of pituitary origin. These cases can be distinguished by the type of exophthalmos.[14] Other cases of hyperthyroidism are due to primary thyroid hyperplasia and hypersecretion.[15] The hyperthyroidism in both types of case responds well to subtotal thyroidectomy, providing sufficient tissue is removed. Similarly, those cases of adrenocortical hyperfunction that are secondary to basophil adenoma of the pituitary would also be relieved. Since these basophil adenomas so rarely produce symptoms because of their small size, the analogy to hyperthyroidism of pituitary origin is not far-fetched. Adrenocortical hyperfunction secondary to primary glandular hyperplasia is analagous to hyperthyroidism of primary thyroid origin. Past failures with adrenal resection must be attributed to insufficient removal of the adrenal glands, a situation that occurred in the early trials with thyroidectomy for hyperthyroidism.

What role does the laboratory play in diagnosis and treatment? The response of the 17-ketosteroid output to the injection of cortisone may aid in distinguishing between tumor and hyperplasia in the adrenogenital syndrome. It is also useful in the regulation of the dosage of cortisone in the adrenogenital syndrome. Further than that, the laboratory is not of fundamental importance. The decision as to the method of treatment must be decided on the basis of the clinical findings.[16]

SUMMARY AND CONCLUSIONS

A case of adrenal hirsutism that partakes of any of the features of adrenocortical hyperfunction (Cushing's disease) must be treated as such even if the virilism is prominent enough to suggest the diagnosis of adrenogenital syndrome. The adrenogenital syndrome will not have any of the features of adrenocortical hyperfunction. Subtotal adrenalectomy is the therapy of choice for adrenocortical hyperfunction and for those cases of adrenogenital syndrome that do not respond to cortisone.

ADDENDUM

Since the submission of this article, the patient has delivered a premature but otherwise normal infant. The antepartum course and parturition were uncomplicated. The patient was given 50 mg. of cortisone after the onset of labor. No further hormonal therapy seemed necessary, and none was given.

710 S. Wolcott, Chicago (12) (Dr. LeVeen).

13. Plotz, C. M.; Knowlton, A. I., and Ragan, C.: Natural History of Cushing's Syndrome, Am. J. Med. 13: 597, 1952.

14. Pfeiffer, R. L.: Thyrotropic Exophthalmos, Bull. New York Acad. Med. 26: 592, 1950.

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CARDIOVASCULAR NEEDLE HOLDER FOR DELICATE SUTURING

Albert P. Giannini, M.D., San Jose, Calif.

During the suturing of blood vessels with 00000 arterial silk on atraumatic needle, it became apparent, especially in deeper wounds, that the ordinary needle holder with the ring-type handle and lock, even when equipped with diamond jaws, was not entirely adequate. The ring-type needle holder on unlatching causes, in most instances, a small amount of movement of the needle while the latter is being released. This motion at times is enough to form small tears at the needle hole. It was noted that the 00000 arterial silk with a swedged-on needle pierced the blood vessels in coarctation, Blalock, Potts, and other cardiovascular procedures with very little force, and when the needle was held in the usual vascular thumb forceps it could easily be pushed through the vessel. The only difficulty was placing and holding the needle in proper position in the thumb forceps.

With the premise that a thumb forceps-type needle holder could work well in this delicate-type suturing and would allow pickup and release of the needle without any movement of the needle, an attempt was made to modify the ends of a regular thumb forceps with diamond jaws to see if that would be satisfactory. However, this was found inadequate as too much thumb pressure was found to be necessary. It was also noted that the usual ring-type diamond jaw needle holder would firmly hold an arterial needle by maintaining thumb pressure but not clamping the holder closed. However, the shape and form of the ring-type needle holder made suturing difficult and hard to control because of the shape of the shanks, the ring handles, and the lack of spring in the shanks.

Therefore, the holder shown in the figure was designed. This holder can be used in the thumb forceps position or needle holder position in the hand while suturing. Pickup and release of the needle can be done as a thumb forceps, yet easily holding the needle in any position. This is made possible by the 8:1 mechanical

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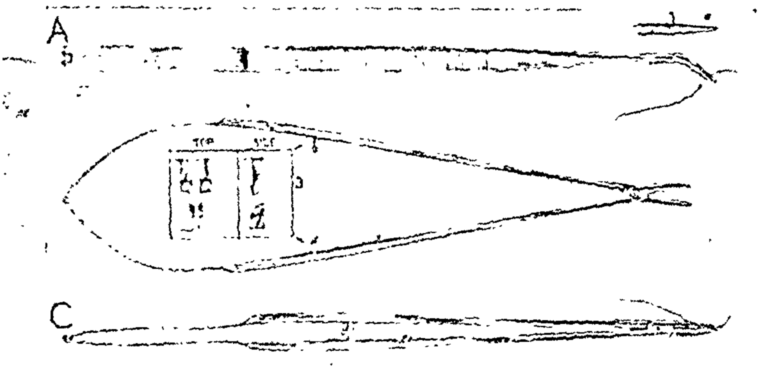
The needle holder used in this study is made with both a straight and angle-type tip and is constructed of stainless steel. It is manufactured by the Lawton Company, 425 Fourth Ave., New York 16.

advantage of shanks to jaws of the holder. The springs were added to the ends of the shanks so that the holder would open with soft, even tension against the fingers. The weight of the holder and the strength of the shanks are such that the needle holder can be held between the fingers in the open position without closing the holder or without the holder slipping out of the fingers with application of little force. The small latch in the center of the needle holder is placed there to keep the holder closed while the nurse places the needle or for any reason should the operator wish to place the needle. While the needle holder is in use the small latch automatically slips through and does not interfere with the use of the needle holder as a thumb forceps.

Hinge 2 in the figure, *A*, is placed there to give the needle holder the adequate amount of stability found necessary for smooth operation of latch 3 in the figure, *B*. The holder may be modified by adding diamond jaws, but these have been found unnecessary, since the needle can be held firmly in any position with its present jaws. The needle can be released and picked up with no unintended movements that may tear a delicate blood vessel while the needle is being released.



Cardiovascular needle holder.

The advantages, therefore, of this needle holder over the usual ring type are: 1. It may be used in the thumb forceps position to suture in difficult areas and to grasp and pull the needle through. 2. It may be used in the regular needle holder position in the hand. 3. It has a smooth pickup and release, obviating unintended movements of the needle. 4. It will hold delicate needles at almost any desired angle. Shown in the figure is the 10-in. model holding 00000 arterial silk on atraumatic needle. Shorter models are also available.

4 Medico-Dental Bldg., Sixth and Santa Clara Streets.

Basic Knowledge.—In the long range, which often but unpredictably turns out to be not very long, practical benefits will also come from advances in basic knowledge. In this area it is important to realize that the possible usefulness of the knowledge to be acquired is an almost irrelevant criterion of the importance of getting it, for the applications of new knowledge are unpredictable and have no bearing upon the incentives or scientific reasoning used by the investigator. But from such advances our whole approach to practical problems may become reoriented by revolutionary new concepts. Here scientific interest motivates the inquiry and curiosity is the guide, but the public interest is deeply involved in the progress made.—Remarks at the Phoenix Memorial Dedication Luncheon, University of Michigan, Ann Arbor, June 9, 1955, prepared by T. H. Johnson, Director of Research, Atomic Energy Commission.

COMPULSORY CASH DISABILITY BENEFITS

This is the first in a series of articles that The Journal *will publish during the next several months concerning the proposal to establish a national system of cash benefits for persons who are totally and permanently disabled. All physicians are urged to acquaint themselves with the facts on this vital issue.*—Ed.

THE LEGISLATIVE BLITZ

The medical profession suddenly is faced by the most serious national legislative crisis to arise since the 1949-1950 attempt to enact a system of national compulsory health insurance. The new problem, cut of the same cloth, has emerged unexpectedly as a result of a legislative blitz in the United States House of Representatives. The House, on July 18, by a roll call vote of 372 to 31, passed H. R. 7225, known as the Social Security Amendments of 1955. The bill was rushed through the House under a procedure suspending the rules, barring amendments, limiting debate to 40 minutes, and requiring a two-thirds vote of approval. Earlier the measure had been sped through the House Ways and Means Committee in executive session without public hearing, despite the protests of Republican committee members who demanded open hearings and careful study of the legislation.

The most controversial provision of H. R. 7225, and the one with the most serious implications for the medical profession, is the section that would make permanently and totally disabled persons at age 50 eligible to receive Social Security benefits not now available to others until age 65. While the American Medical Association, like all thoughtful groups and individuals in the country, has become increasingly concerned over the continued, general expansion of the Social Security system, it takes no position on those proposals that do not involve health or medical care. The Association, however, is specifically opposed to the plan for compulsory cash disability benefits, which would have a direct effect on the medical profession and the future of the American medical care system. Fortunately, the Senate Finance Committee, headed by Sen. Harry Byrd, Virginia Democrat, already has wisely decided to postpone action on H. R. 7225 until the second session of the 84th Congress. At that time there will be extensive public hearings on all aspects of the legislation. This gives the medical profession, and all others interested in these far-reaching Social Security amendments, some five months in which to acquaint themselves with the facts and gird for action.

In addition to the disability benefits, the House bill would lower the retirement age for women from 65 to 62, extend monthly benefits for permanently and totally disabled children beyond the age of 18, and expand compulsory social security coverage to all self-employed professional groups except physicians. Affecting about 1,300,000 persons, the changed benefits will cost an estimated 2 billion dollars a year for the next 20 years and about 2.5 billions annually thereafter. The bill would increase payroll taxes in 1956 by 0.5% each on employers and employees and 0.7% on the self-employed. The same increases would be applied to the already scheduled tax rises in 1960, 1965, 1970, and 1975, bringing the social security tax in 1975 to 4.5% each on employers and employees and 6.75% on the self-employed. The extension of monthly benefits at age 50 to the totally and permanently disabled would apply to an estimated 250,000 persons in the first year and would cost 200 million dollars in benefits, according to the bill's sponsors. In 25 years they predict that one million workers would be receiving disability benefits amounting to 850 million dollars a year. To be eligible for benefits a worker must be at or over age 50, be fully and currently insured under social security, and have 20 quarters of coverage in the last 40 quarters ending with the quarter of disablement.

Benefits would be payable only after a six months' waiting period. The determination of disability would be made by the state agencies that make the determinations under the disability "freeze" provisions enacted last year. The definition of disability is the same as in the freeze provision of present law, except that there would be no presumed disability for the blind. To promote rehabilitation, the bill provides that a person who performs work while under a state rehabilitation program will not, solely by reason of that work, lose his benefits during the first year. The bill also contains a provision that would make it possible to stop the benefits of anyone who, without good cause, refuses available rehabilitation services. The present bill would not provide benefits for the dependents of disabled workers.

The real meaning and future implications of this proposal, as simply another step toward a complete, "cradle-to-grave" social security system, can be seen in some of the remarks made last July 18 in the House debate or published in the Congressional Record for that day. For example, Rep. Dingell of Michigan, perennial advocate of national compulsory health insurance, included the following in a 10-point program for expanding the social security system: "Temporarily disabled persons who are insured on the basis of recent employment before their disability should be eligible for cash benefits for upwards to 26 weeks in a year. Provision should also be made for cushioning the cost of medical services during such period of temporary disability. The disability benefit provisions of H. R. 7225 should be reviewed with a view to reducing or eliminating the requirement that a totally and permanently disabled worker must be age 50 before being eligible for benefits. Consideration should also be given to making benefits available to dependents of insured workers who became totally and permanently disabled."

Rep. Dingell also said: "Another and important amendment which I have been sponsoring over the years, and which will eventually become law, provides 60 days of free hospitalization for all recipients of social security benefits." Numerous members of the House echoed Rep. Dingell's desire for still greater expansion of the social security system. Rep. Zablocki of Wisconsin declared that "the bill before us represents a step in the right direction, and for that reason merits our support." Rep. Fino of New York said that "I will support this bill, not because it goes far enough in humanizing our social security system, but because it represents a step in the right direction. . . . If we are to improve and extend our law, let us go all the way now." And Rep. Roosevelt, also of New York, commented: "It is my candid opinion that such a hearing (public hearings by the House Ways and Means Committee) would have been a farce."

However, a few courageous Congressmen spoke out in protest against the way in which the bill was railroaded through the House, and they urged public hearings and careful study of the legislation. Among them was Rep. Jenkins of Ohio, who said: "I do not, however, believe that our committee has discharged its obligation to either the Congress or to the American people by its brief and closed-door consideration of this vital legislation. I have sought to point out the grave social and economic implications of the bill. I have dwelt at some length upon the staggering ultimate costs of this developing program because I do not believe that either the Congress or the public has any conception of its magnitude.

Rep. Kean of New Jersey had this comment: "By their action in refusing to have public hearings, by their action in turning down my motion to invite insurance actuaries to estimate the cost, by their action in turning down my motion to invite doctors to testify as to possible means of determining disability, the Ways and Means Committee has abdicated its responsibility, and the Senate will write the bill."

Rep. Curtis of Missouri told the House: "All we are engaged in today is making a mockery of the House of Representatives and confirming the mockery already made of itself by the Ways and Means Committee. The Senate leaders have already announced that they intend to hold hearings on this bill. They have already stated that they are not going to abandon, just yet, at any rate, the time-tested procedures that produce good legislation and protect against bad legislation."

The issue will be joined when the second session of the 84th Congress convenes in January and the Senate Finance Committee begins public hearings on the bill. Subsequent articles in this series will outline the American Medical Association's opposition to the disability benefits plan embodied in the legislation and will present the reasons and facts upon which that policy is based.

Our New Chemical Environment.—The mushrooming chemical industry, the incipient wide application of nuclear energy, the revolutionary changes in food processing, and many other recent technologic developments are affecting the urban environment, and consequently the health of man, in multitudinous ways. The numerous benefits associated with these developments have detracted from recognition that the health factor may well be the limiting factor in their continuing development. For example, in the application of nuclear energy for peaceful uses, it is likely that the rate of advancement of such uses will be controlled by the extent to which the radiation health hazards associated with these uses, and with the wastes derived from their uses, can be properly controlled. This limiting condition might some day apply to the chemical industry and to most other new technologic developments. . . . Contamination of sources of water supply, the widespread use of new chemicals in the production and processing of foods, the increasing use of radiopharmaceuticals, of synthetic paints, insecticides, pesticides, detergents, etc., these constitute an extremely complex chemical situation. Today chemicals pervade so many ph [illegible] f man's environment we might say the environment has [illegible] hemicalized."—H. F. Ludwig, F.A.P. [illegible] he [illegible] viro mental Health, *American Jou* [illegible] 19

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ALDOSTERONE AND ALDOSTERONISM

The recent isolation, crystallization, and characterization of aldosterone (11β, 21-dihydroxy, 3,20-diceto-4-pregnen-18-al), a new steroid hormone from the adrenal cortex, has prompted great interest in the role of the hormone in the health and disease.[1] While aldosterone was not isolated until 1952, it had long been ob-
rved that the amorphous fraction of adrenal extracts,
portion remaining after removal of all known crystalline substances, was highly effective in maintaining the life of animals in which adrenalectomy had been done. Identification of the principle or principles responsible for this effect eluded investigators until Grundy and associates, using newly developed methods of chromatography and a sensitive bioassay procedure, succeeded in isolating a highly active substance.[2] Subsequently, in collaboration with their Swiss colleagues Wettstein,
eher, Von Euw, Reichstein, and Schindler, the British
orkers crystallized the active principle and established its chemical structure.[3] They suggested that it be named aldosterone since it differed from corticosterone only in the presence of an aldehyde rather than a methyl group at the C_{18} position. This name has largely replaced the earlier one, electrocortin, bestowed when the physiological action but not the chemical structure of the compound was known. Subsequently, aldosterone was isolated from the adrenal venous blood of dogs and monkeys and from the perfusate of calf adrenals, thus strengthening the concept of the hormonal nature of the compound.

Studies on the biological effects of aldosterone have been limited by the minute amounts of hormone presently available; however, preliminary work indicates the hormone elicits both mineralocorticoid and glucocorticoid effects. Thus, it is at least 20 times as effective as desoxycorticosterone in maintaining electrolyte balance and well-being in patients with adrenal cortical hypofunction and about one-third as active as cortisone i
causing deposition of liver glycogen and in lowering th
eosinophil count in mice in which adrenalectomy ha
been done. Furthermore, secretion of the hormone is a
parently independent or largely independent of the p
tuitary gland but may at least in part be regulated
electrolyte balance.[4]

Elucidation of the relationship of aldosterone and c
tain disease conditions has been greatly advanced
work initiated in 1952 by Luetscher and his associa
on a urinary sodium-retaining substance, since identif
as aldosterone.[5] These investigators found particula
high titers of this substance in the urine of patients suf
ing from certain diseases characterized by edema as
ciated with low sodium excretion, such as nephro
heart failure, and hepatic cirrhosis, while subsequent
vestigators have reported high titers in eclampsia [6]
malignant hypertension.[6b] It is generally conside
however, that the high titers of aldosterone in t
varied conditions are an effect, and not the cause, of
underlying disease process.

Evidence is now accumulating to suggest that
creased aldosterone production may in other insta
actually be the primary cause, rather than a result,
disease condition. Conn [7] has recently described a
tient suffering from intermittent tetany, parasthe
chronic severe muscular weakness, polyuria and
dypsia, and hypertension but with no edema. Labor
studies revealed very high titers of a sodium-reta
substance in the urine, low blood potassium levels,
blood sodium levels, and alkalosis. In addition ther
a renal tubular defect in the reabsorption of
thought to be secondary to chronic hypokalemia.
gery revealed an adrenal cortical adenoma that
found by bioassay to be rich in aldosterone-like ac
After surgery, the patient's clinical symptoms
metabolic abnormalities disappeared, but the latter
be reproduced with small doses of aldosterone.
and Iseri have reported an apparently similar case,
Conn [7] has suggested that certain other reported c

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potassium depletion and alkalosis, such as those described by Earle and his associates,[9] by Wyngaarden and his associates,[10] and by Evans and Milne,[11] are also examples of hyperaldosteronism. The report of Evans and Milne is of particular interest since the patient was found to excrete high titers of a sodium-retaining substance in the urine. Conn suggests that these cases represent a hitherto unrecognized clinical syndrome. He has suggested that the name primary aldosteronism be applied to this syndrome to differentiate it from those conditions in which the increased excretion of a sodium-retaining corticoid is apparently secondary to the underlying disease. He further recommends that all patients with an unexplained hypokalemic alkalosis should undergo adrenal surgery, and, even if no adrenal tumor is found, partial or complete adrenalectomy should be considered as a means of combating the metabolic abnormality.

CONTROLS IN WORKMEN'S COMPENSATION

This issue of THE JOURNAL (page 1463) contains an abstract of a much larger collection of data shortly to be issued by the Council on Industrial Health on some monetary aspects of workmen's compensation. The full report will provide committees on workmen's compensation or industrial health in the state medical societies with factual information on trends and distribution of premiums earned and medical and indemnity losses incurred by insured employers in 39 jurisdictions for a 10 year period.

Here is much food for thought. Certain statutory and administrative provisions have long been considered necessary as "controlling factors" in the maintenance of minimal costs for medical care, and indirectly for indemnity. Among a sizable list of such factors several have stood out—the method of physician selection, limitations in medical benefits in time or amount, and fee schedules. This report questions the validity of these concepts. The physician is selected by the employer in 33 jurisdictions in this study. Yet in those jurisdictions where the employee may select the physician, medical losses incurred tend to fall below the median for all in both percentage increases and average ratio of medical to total losses incurred for base periods. In 22 jurisdictions medical benefits are limited or a fee schedule has been set up. Again there appears to be no clear relation between minimal losses incurred and the existence of a "control" measure. Other contributing factors, such as the character of administrative supervision, policies of medical societies, and quality of medical care, should be given due consideration in future discussions of these medical costs. But on the basis of dollar amounts, there is ample evidence that traditional concepts may be in error and that greater flexibility of medical care provisions in workmen's compensation can improve the lot of disabled workers without insuperable economic burdens for anyone.

PROGRESS ON JENKINS-KEOGH BILLS

On July 19 the Committee on Ways and Means of the House of Representatives, by a vote of 16 to 8, included an amended version of the Jenkins-Keogh bills in the "bobtail" revenue bill. In the hectic last days of the first session of the 84th Congress, Chairman Jere Cooper (D., Tenn.) officially killed this catchall revenue bill for this year and stated that the committee will try to complete the bill after Congress reconvenes next January.

This favorable committee vote in July is the high watermark in the long struggle to obtain tax deferment equality for the self-employed and the pensionless employed. During the hearings on the Jenkins-Keogh bills on June 27 and 28, eight congressmen who are not members of the House Ways and Means Committee testified in favor of the principle of these bills. (The testimony presented by the American Bar Association, American Dental Association, American Farm Bureau Federation, American Medical Association, and the statement and analytical report on the bills by the Treasury Department have been published in Bulletin 100 by and may be obtained from the A. M. A. Bureau of Medical Economic Research.) The Secretary of the Treasury thrice granted that the federal revenue laws are unfair to the self-employed and strongly urged that the bills, if approved, exclude the pensionless employed in order to reduce the revenue loss. The bill was so amended. Other changes were the reduction in the maximum amounts that could be excluded annually from $7,500 to $5,000 and in the lifetime maximum from $150,000 to $100,000. Other amendments would permit combinations of an annuity contract with a life insurance policy, with tax deferment only on the annuity part of the premium, and the use of a bank as a custodian of retirement funds. These four amendments were made before the 16 to 8 vote was taken. The failure of the Ways and Means Committee to report out the "bobtail" tax bill before adjournment in August means that the amended Jenkins-Keogh bills cannot be acted upon in the House until the committee approves the completed "bobtail" bill after Congress reconvenes next January. The possibility that the committee will not complete the "bobtail" bill during the next session or will report it out with the amended Jenkins-Keogh bills omitted now seems remote.

The progress made during this first session of the 84th Congress and the strong statements made by many members of Congress during the hearings of June 27 and 28 should encourage physicians, other self-employed persons, and other interested individuals to inform their congressmen of their views while they are at home this fall. The prospects for the enactment of these bipartisan bills to establish a voluntary pension system for the self-employed are definitely on the upgrade. Perhaps the time is approaching when it will no longer be an economic sin to be self-employed.

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[10] Wyngaarden, J. B.; Keitel, H. G., and Isselbacher, K.: Potassium Depletion and Alkalosis: Their Association with Hypertension and Renal Insufficiency, New England J. Med. 250: 597, 1954.

[11] Evans, B. M., and Milne, M. D.: Potassium-Losing Nephritis Presenting as a Case of Periodic Paralysis, Brit. M. J. 2: 1067, 1954.

ORGANIZATION SECTION

PUBLIC RELATIONS INSTITUTE

A public relations meeting combining legislative briefing with informal discussions on medical society public relations activities will be sponsored by the American Medical Association at Chicago's Drake Hotel on Aug. 31 and Sept. 1. Attending this public relations institute will be some 300 representatives of state and county medical societies, woman's auxiliaries, and national medical organizations. On the first day there will be a series of discussion sessions designed to encourage audience participation. Dr. David B. Allman, A. M. A. Trustee and Chairman of the Legislative Committee, will moderate a discussion on the best way to inform the membership of important legislative activity. Other sessions on this morning program are "Planning Ahead Makes for Better PR," "Stimulating PR Interest in the Individual Member," "Magazine Relations: What Do Writers Expect from Doctors," and "Putting A. M. A. PR Aids to Use." Featured in the magazine discussion will be Howard Whitman, author and television commentator, and James Riggs and James Liston, managing editor and articles editor of *Better Homes and Gardens*.

At luncheon on Aug. 31, registrants will hear James E. Bryan, medical public relations consultant. The afternoon session will consist of three separate group discussions taking up the special public relations problems of state medical societies, large county societies, and small county societies. The second day of the institute will be made up of briefing sessions. First, registrants will hear about new national public relations projects needing cooperation of state and county societies. Then the group will learn details on the new social security issue pending in Congress. After presentation of A. L. Kirkpatrick, manager, insurance department, Chamber of Commerce of the United States, Dr. Ernest B. Howard, A. M. A. Assistant Secretary, will moderate a panel discussion on "What Social Security Expansion Means to the Medical Profession." As part of the luncheon session on Sept. 1, the institute audience will get advance information on forthcoming network television programs of special interest to the medical profession. Plans for a new weekly series of telecasts entitled "Medical Horizons" will be outlined; Jim Moser, creator of the "Medic" program, will personally describe the 1955-1956 blueprint for the popular NBC series, and details on the fall and winter schedule of "March of Medicine" will be revealed.

Winding up the 1955 Public Relations Institute will be the showing of films. A new "Medic" show will be previewed, and registrants will have an opportunity to see A. M. A. motion pictures available for showing on television or to club, church, and school audiences. Throughout the two-day meeting, a display of state and county society public relations projects and exhibits obtainable on loan from the A. M. A. will be on view in an adjoining room.

FEDERAL MEDICAL LEGISLATION

First Session, 84th Congress

Tax Postponement for Self-Employed

Congressman Lipscomb (R., Calif.) has introduced, in H. R. 5605, a measure to encourage the establishment of voluntary pension plans by individuals. He proposes to postpone taxes on limited amounts of the taxpayers' net income if such sums are used in setting up a restricted retirement annuity. This measure is identical with H. R. 9 and 10 by Congressman Jenkins (R., Ohio) and Keogh (D., N. Y.), and similar to H. R. 2092 by Congressman Ray (R., N. Y.). This bill was referred to the Committee on Ways and Means.

Assistance to States for Industrial Safety

Congressman Frelinghuysen (R., N. J.), in H. R. 5740, has introduced a measure identical to S. 1091 and similar to H. R. 4877, reported in The Journal, May 14, 1955, page 125. This would give assistance to the states for improving and maintaining safe work places and practices in industry. This bill was referred to the Committee on Education and Labor.

Water Pollution Control Act

Congressman Johnson (D., Wis.) would extend and strengthen the Water Pollution Control Act of 1948 by H. R. 5897, which is similar to S. 890, H. R. 3426, H. R. 5296, and H. R. 5369, reported in The Journal, June 4, 1955, page 407. The Johnson measure however provides the addition of a new section to permit incentive grants and loans at 2% to expedite the construction of sewage treatment plants. This bill was referred to the Committee on Public Works.

Appropriation for the World Health Organization

Representative Carnahan (D., Mo.), in H. J. Res. 293, and Senator Humphrey (D., Minn.), in S. J. Res. 78, would increase from 3 million to 5 million dollars the limit on the United States annual obligation to the World Health Organization. Congressman Judd (R., Minn.), in H. J. Res. 304, would make a similar report on the limit in U. S. obligation, but the total appropriation could not exceed 33.3% of WHO's total operating budget. Both House measures were reported to the Foreign Affairs Committee. The Humphrey bill was referred to the Committee on Foreign Relations.

Doctor-Draft Extension, Military Scholarships, and Equalization Pay

Congressman Vinson, in H. R. 5946, introduced the committee's version of the "Doctor-Draft" act extension, the military medical scholarship bill, and the $100 per month equalization pay for medical officers. Title 1 would extend the "Doctor-Draft" law until July 1, 1957, and provide further that "Effective July 1, 1955, and notwithstanding any other provision of this subsection, no person who after attaining the thirty-fifth anniversary of the date of his birth shall be liable for induction under this subsection if he has applied for a commission in one of the Armed Forces and was rejected for such commission on the sole ground of a physical disqualification." This included the simple extension of the doctor draft provided in H. R. 2886 (reported in The Journal, March 19, 1955, page 1028). Title 2 would provide for the establishment of medical and dental scholarships similar to Congressman Bennett's (D., Fla.) measure, H. R. 4645, and the Senate bill S. 1444 introduced by Senators Russell (D., Ga.) and Saltonstall (R., Mass.), which were reported in The Journal, June 11, 1955, page 483. Title 3 would continue the $100 special pay for physicians, dentists, and veterinarians.

Senator Russell, in S. 1946, introduced the administration's $100 equalization pay bill for physicians, dentists, and veterinarians but would require physicians obligated under the basic Selective Service Act to serve an additional year if they were to receive the $100 pay incentive. This was abandoned for the House version, H. R. 6057, subsequently H. R. 3005. Congressman Vinson introduced, in H. R. 6057, a measure to replace H. R. 5946, the essential difference being that the section on medical scholarships was deleted. This measure, H. R. 6057, was reported favorably to the House. In the Senate, hearings were held on H. R. 6057, and it was attached to H. R. 3005, the extension of the basic Selective Service Act and the benefits under the Dependent's Assistance Act. As approved by the committee, a veterinarian if employed by the Department of Agriculture for 24 months would not be liable for induction. This provision was eliminated in the conference between the House and the Senate and the upper limits of the draft law dropped from 51 to 46. These bills were handled by the respective armed services committees.

Commission on Aging and Aged

Congressman Corbett (R., Pa.) has introduced, in H. R. 6044 a measure identical to S. 693 and similar to a number of previously reported measures that would study problems of the aging and the aged and make recommendations to Congress This bill was referred to the Committee on Education and Labor

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From the Washington Office of the American Medical Association.

MEDICAL NEWS

CALIFORNIA

Cerebral Palsy Training Program.—The first term of the training course for personnel concerned with the care of cerebral-palsied children for the academic year 1955-1956 begins at Children's Hospital in San Francisco Sept. 1. The program, supported by the United Cerebral Palsy associations in the hospital, provides training in the care of the cerebral-palsied preschool child; seminars and conferences; and contacts with parents of the palsied children in the school through home visits and with the public and private agencies concerned. The curriculum is set up to train occupational therapists, physical therapists, and nursery school teachers who wish to specialize in the cerebral palsy field. For information write to: Dr. Luigi Luzzatti, Children's Hospital, 3700 California St., San Francisco.

COLORADO

State Medical Meeting in Denver.—The 85th annual session of the Colorado State Medical Society will convene at the Shirley-Savoy Hotel, Denver, Sept. 20-23, under the presidency of Dr. Samuel P. Newman, Denver. Guest speakers and their first presentations will include:

L. Henry Garland, San Francisco, Radiologic Diagnosis of Certain Pelvic Disorders.
John C. Burch, Nashville, Tenn., Diagnosis of Pelvic Masses.
Philip D. Wilson, New York, Differential Diagnosis of Low Back Pain.
Charles A. Ragan, New York, Rheumatoid Arthritis.
James T. Priestley, Rochester, Minn., Tumors of the Adrenal Cortex.
Thomas L. Shipman, Los Alamos, N. Mex., Control of the Most Dangerous Element Known to Man.

On Wednesday at 12:10 p. m. Dr. Warren W. Tucker, Denver, will serve as moderator for a symposium on the pelvis by Drs. Burch, Wilson, and Garland. At the same time on Thursday Dr. Harry C. Hughes, Denver, will be moderator of a symposium on the joints, presented by Drs. Wilson, Ragan, and Garland. Friday noon Drs. Priestley and Ragan will present a symposium on the adrenals, of which the moderator will be Dr. Carl S. Gydesen, Colorado Springs. Through the cooperation of Wyeth Laboratories, closed-circuit telecasts on the subjects of the symposiums will originate daily from the Denver General Hospital about two hours preceding the presentation of the symposiums. Social events will include a dinner Tuesday, 6:30 p. m., followed by a stag smoker, and the annual banquet Thursday, 6:30 p. m., sponsored by the woman's auxiliary, which will meet simultaneously. Tuesday afternoon the golf tournament will be held at the Wellshire Country Club and the Trap Shoot at the Denver Municipal Trap Club. There will be a handicap state medical bowling meet.

FLORIDA

Society News.—Newly elected officers of the Florida Academy of General Practice include: Dr. Frank T. Linz, Tampa, president; Dr. Leo M. Wachtel, Jacksonville, president-elect; Dr. Leon S. Eisenman, Hialeah, vice-president; and Dr. James B. Hodge, Tampa, secretary-treasurer.

Appoint Professor of Medicine.—Dr. Ralph Jones Jr., formerly director of C. W. Robinson section, department of medicine, Hospital of the University of Pennsylvania, has been appointed chairman of the department of medicine, University of Miami School of Medicine, Coral Gables. He succeeds Dr. Franz H. Stewart, who accepted the appointment on a pro tem basis for one year only and who now returns to full-time private practice. Dr. Jones was recently named chairman of the national coordinating panel for work on cancer chemotherapy. After service in the Medical Corps of the U. S. Army, he was a research associate in medicine and a research associate in urology at the University of Chicago School of Medicine.

ILLINOIS

Dr. Fischer Honored.—Dr. Andrew L. Fischer, Hoffman, was honored for 50 years of active practice at the Clinton County Medical Society dinner meeting June 8 at St. Joseph's Hospital in Breese. Dr. Fischer has been a company physician and surgeon of the Southern Railway System since 1915. He was present at the dedication of St. Mary's Hospital in Centralia in 1908, is the only physician of the original hospital staff using its facilities, and is the oldest physician now using the hospital. During World War I Dr. Fischer served in the Army Medical Reserve Corps. In World War II he received honorable mention for distinguished service as a selective service medical examiner.

Chicago

Research Grants.—The Hektoen Institute for Medical Research of the Cook County Hospital announces receipt of $10,000 from the Damon Runyon Memorial Fund for Cancer Research for studies in leukemia; $10,000 from the Dr. Leonard H. and Louis Weissmann Medical Research Foundation for studies in radioactive isotopes; and $15,000 from the Olivia Sue Dvore Foundation for leukemia research.

New Head of Physical Medicine Department.—Dr. David I. Abramson, who has been affiliated with the University of Illinois College of Medicine since 1946, will become head of the department of physical medicine and rehabilitation Sept. 1 at the University of Illinois Research and Educational Hospitals. Dr. Abramson, an attending physician at Michael Reese, Mt. Sinai, and Hines Veterans Administration hospitals, is also a consultant in peripheral vascular diseases for the regional office of the Veterans Administration. He formerly taught at the University of Cincinnati and directed cardiovascular research at May Institute for Medical Research in Cincinnati. A medical officer in the U. S. Army from 1942 to 1946, he was discharged with the rank of major.

MARYLAND

Dean Wylie Retires.—Dr. Hamilton Boyd Wylie, dean, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, retired July 1 after 42 years of service. Dean Wylie, who began his career at the school of medicine in 1913 as an associate in physiological chemistry, became assistant dean in 1942, acting dean in 1946, and later dean of the school of medicine. Dr. Wylie was honored on his birthday, when May 3 was designated by the university's medical library as "Wylie Day." A display including photographs and articles concerning Dean Wylie was on view in the library's reading room, and an informal reception was held during the late afternoon.

Personal.—Dr. George Washington Corner, Baltimore, director of the department of embryology, Carnegie Institution, received the honorary doctor of laws degree from Tulane University of Louisiana, New Orleans, at commencement May 31.——Dr. John C. Whitehorn, Henry Phipps Professor of Psychiatry and director of the department of psychiatry at Johns Hopkins University School of Medicine and psychiatrist-in-chief of the Johns Hopkins Hospital, Baltimore, since 1941, received an honorary doctor of science degree at the University of Nebraska Aug. 5. Dr. Whitehorn, who was previously affiliated with the Massachusetts General Hospital and Harvard Medical School, Boston, and Washington University School of Medicine, St. Louis, served as president of the American Board of Psychiatry and Neurology in 1946 and of the American Psychiatric Association in 1951.

MASSACHUSETTS

Nursing Course in Poliomyelitis.—Boston University is conducting a course on "Poliomyelitis Nursing" to train graduate nurses in administration, teaching, and supervision for poliomyelitis units. During the morning the seven nurses, who have come from Puerto Rico, Michigan, and Oklahoma, as well as New England,

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

work in the poliomyelitis wards at Children's Medical Center. In the afternoons, classes are held. Two weeks of the six week course will be spent at the Wellesley Respirator Center, a part of the Children's Medical Center.

Dr. Drinker Honored.—The portrait of Dr. Cecil Kent Drinker was recently unveiled in the Henry Pickering Bowditch Library of Harvard Medical School, Boston. Dr. Drinker's association with Harvard University began in 1916, when he was instructor in physiology. He served as professor of physiology in 1923 and as head of the department in the school of public health from its beginning until 1947. He also served as assistant dean of the school of public health from 1924 to 1935 and as dean from 1935 to 1942. Among the speakers at the ceremony were Dr. James L. Gamble, professor emeritus of pediatrics; Dr. J. Howard Means, Jackson Professor Emeritus of Clinical Medicine; Dr. George Packer Berry, dean of Harvard Medical School; and Dr. Eugene M. Landis, Higginson Professor of Physiology, who presented Dr. Drinker with a book of letters and telegrams from former students and friends who were unable to attend the ceremony.

MINNESOTA

University News.—The University of Minnesota Medical School, Minneapolis, recently established a separate department of anesthesiology, formerly a segment of the department of surgery. The head of the new department is Dr. Frederick H. Van Bergen.

Symposium on Arteriosclerosis.—The Minnesota Symposium on Arteriosclerosis, sponsored by the University of Minnesota and the Minnesota Heart Association, will be held at the Mayo Memorial in Minneapolis Sept. 7-9. General sessions and a half day of clinic and laboratory visits will be devoted to five major topics: "The Challenge of Arteriosclerosis," "Atherosclerosis," "Peripheral and Cerebral Arteriosclerosis," "The Internist and Some Tools," and "The Surgical Treatment of Arteriosclerosis." Principal speaker at the Wednesday dinner meeting in the Minneapolis Club will be Dr. Paul Dudley White, Boston, who will discuss "The Coronaries Through the Ages." Other participants include: Drs. E. Cowles Andrus, Baltimore, Irvine H. Page, Cleveland, Louis N. Katz, Chicago, and James Watt, Bethesda, Md. General chairman of the symposium is Ancel B. Keys, Ph.D., of the University of Minnesota. For information, write Dr. Robert B. Howard, Mayo Memorial, University of Minnesota, Minneapolis 14.

NEW MEXICO

Indian Health Area Office.—Dr. Henry W. Kassel, a commissioned officer in the U. S. Public Health Service, has been appointed medical officer in charge of the Indian health area office in Albuquerque, Surgeon General Scheele of the U. S. Public Health Service has announced. Dr. Kassel, who will take over his new duties Sept. 1, will be responsible for medical care and public health services to more than 101,000 Indians on reservations located in four states. The Albuquerque area office has jurisdiction over medical care and health in the following Indian agencies: Navajo in New Mexico, Arizona, and Utah; Consolidated Ute in Colorado; and United Pueblo, Jicarilla Apache, Mescalero Apache, and Zuni in New Mexico. The area office also is responsible for the practical nursing school and sanatorium for Indians at Albuquerque. Since January, 1950, Dr. Kassel has been assigned to the Denver regional office of the U. S. Department of Health, Education, and Welfare, working with state health departments in Montana, Colorado, Idaho, Wyoming, and Utah. He was chronic disease consultant for this region until October, 1951, when he became chief of medical programs for the region.

NEW YORK

Lecture on Endometriosis.—Dr. Carl T. Javert, professor of gynecology and obstetrics, Cornell University Medical College, New York City, will speak on endometriosis at 8:30 p. m., Sept. 8, at the Jewish Chronic Disease Hospital, East 49th Street and Rutland Road, Brooklyn.

Rehabilitation of the Blind.—A program of professional training in rehabilitation of the blind, presented at the Industrial Home for the Blind, will offer a 20 week course for workers entering the following areas of specialization: rehabilitation counselor; vocational guidance director; vocational instructor; psychologist; physical orientation and foot travel instructor; placement specialist; service stands supervisor; vocational program administrator; and specialist in work for the deaf-blind. There is no tuition fee. A small number of traineeships ($50 a week) are available. They are intended to cover room, board, and incidental expenses. These are meant for students whose residence is outside of the New York City area. Closing date for applications for the first program is Aug. 29. Two 20 week programs are scheduled for the academic year 1955-1956: Program 1, Sept. 19, 1955, through Feb. 3, 1956, and Program 2, Feb. 13 through June 29. For information write Mr. Winfield S. Rumsey, Director of Project, Industrial Home for the Blind, 57 Willoughby St., Brooklyn 1.

Personal.—Dr. Cewsme S. Barresi, Silver Creek, was honored recently when a dormitory at Alfred University was named for him.——Luther E. Woodward, Ph.D., senior community mental health representative of the New York State Department of Mental Hygiene, has received the annual Norma and Murray Hearn Social Action award for his "pioneer work in the field of mental health."——At the 97th commencement of the State University of New York College of Medicine at New York City, Brooklyn, the eighth Alumni Medallion for Distinguished Service to American Medicine was presented to Dr. Alexander S. Wiener for his basic work in the genetics of the blood groups, for allergic disorders, and for his contributions to transfusion reactions and exchange transfusions.——Dr. Hyman Pleasure, assistant director at the Edgewood Division of Pilgrim State Hospital in Brentwood, has been appointed director of Middletown State Homeopathic Hospital, succeeding Dr. Walter A. Schmitz, who retired as director on July 31 after 41 years on the staff of the hospital.——Dr. F. Adrian Kantrowitz, instructor in surgery at New York Medical College, Flower and Fifth Avenue Hospitals, New York City, has been named to concurrent posts in Brooklyn at the State University of New York College of Medicine at New York City and Maimonides Hospital, where he will be assistant professor of surgery in charge of the cardiovascular surgery department.

New York City

Name Professor of Ophthalmology.—Dr. Conrad Berens, recently appointed life member of the Harvey Society, has been promoted from associate professor to professor of ophthalmology at New York University Post-Graduate Medical School. Dr. Berens is ophthalmic surgeon, pathologist, and director of research at the New York Eye and Ear Infirmary; director of ophthalmology at Midtown Hospital; and director surgeon of the Seamen's Church Institute.

Mental Hygiene Clinic for the Deaf.—The Office of Vocational Rehabilitation of the U. S. Department of Health, Education, and Welfare recently announced an initial grant of $27,800 to the New York State Psychiatric Institute to establish and conduct a mental hygiene clinic for the deaf. The clinic, which will be located at the Psychiatric Institute, 722 W. 168th St., will serve the deaf in three major areas: (1) in research activities, (2) in counseling and therapeutic services, and (3) in training of professional workers—psychiatrists, psychologists, social workers, and others. Dr. Franz Josef Kallmann, professor of psychiatry at Columbia University College of Physicians and Surgeons and head of the department of medical genetics at the New York State Psychiatric Institute, will direct the clinic.

OHIO

Alvarenga Prize to Dr. Rammelkamp.—On July 14 the College of Physicians of Philadelphia awarded the Alvarenga prize for 1955 to Dr. Charles H. Rammelkamp, Cleveland, "for his outstanding work in the field of streptococcic infections, particularly in relation to rheumatic fever and nephritis." The prize was established by the will of Pedro Francisco DaCosta Alvarenga of Lisbon, Portugal, an associate fellow of the College of Physicians of Philadelphia, to be awarded annually by the college on the anniversary of the death of the testator in 1883.

Course on Forensic Medicine.—The Law-Medicine Center of Western Reserve University, Cleveland, will present a course, "Law-Medicine Problems," on 15 Tuesday evenings from 7 to 9 p. m., starting Sept. 20, at the WRU School of Law, 2145 Adelbert Rd. Six lectures will concern diseases and injuries of the heart and vascular system, and seven sessions will deal with injuries and diseases of the head and spinal cord. This noncredit course (tuition, $55) is planned for physicians, attorneys, claimsmen, industrial relations personnel, labor union officers, and others dealing with medicolegal problems. Information is available by writing to: Director, Law-Medicine Center, Western Reserve University, Cleveland 6.

PENNSYLVANIA

State Medical Meeting in Pittsburgh.—The 105th annual session of the Medical Society of the State of Pennsylvania will convene at the Hotel William Penn, Pittsburgh, Sept. 20-23, under the presidency of Dr. Dudley P. Walker, Bethlehem. The general sessions will open Tuesday at 1 p. m. with the following program:

Investment Planning for the Physician, Mr. Malcolm E. Lambing, Pittsburgh.
Insurance, Mr. George H. Hafer, Harrisburg.
The Doctor and His Income Tax, Mr. George E. Guentner, Pittsburgh.
The Doctor and His Office, Mr. James E. Bryan, Summit, N. J.

At 3:30 p. m. Dr. Isidor S. Ravdin, Philadelphia, will serve as moderator for "The Care of Casualties in Major Catastrophes," in which the first paper, "How to Reduce Mortality" by Dr. Walker, will be followed by "Plasma Transfusions in Hypovolemic Shock and Malnutrition" by Dr. J. Garrott Allen, Chicago; "Preservation of Blood by Freezing" by Lieut. Col. William H. Crosby, Washington, D. C.; "Lessons Learned in a Mobile Surgical Hospital and Their Application in the Care of Mass Casualty Disaster" by Lieut. Col. Kryder E. Van Buskirk, Washington, D. C.; and "What Is My Responsibility as a Practicing Surgeon?" by Dr. William T. Fitts Jr., Philadelphia. Wednesday morning Dr. John W. Shirer, Pittsburgh, will moderate the program, "Present Status of Health and Welfare Plans," which will open with a paper, "Problems Encountered in the Operation of the United Mine Workers of America Welfare and Retirement Fund" by Dr. Warren F. Draper, executive medical officer, United Mine Workers of America, Washington, D. C. Dr. Joseph A. Langbord, medical director, Sidney Hillman Medical Center, Philadelphia, will speak for the Amalgamated Clothing Workers Health and Welfare Plan and Mr. John F. Tomayko, insurance and pension department, United Steelworkers of America, Pittsburgh, for the United Steelworkers of America Health and Welfare Plan. Thursday morning will be devoted to consideration of the following problems created by new developments in medicine:

The Cortisone and ACTH Story, Thaddeus S. Danowski, Pittsburgh.
Endocrine Aspects for Control of Neoplastic Disease, Rulon W. Rawson, New York.
The Diabetic Problem, George E. Anderson, Brooklyn, N. Y.
Hypertensive Drugs, Charles C. Wolferth, Philadelphia.
Progress in Poliomyelitis, Jonas E. Salk, Pittsburgh.
Short and Long-Term Anticoagulant Therapy in Coronary Artery Disease, Thomas M. Durant, Philadelphia.

School health problems will be discussed Thursday afternoon by Drs. Thomas E. Shaffer, Columbus, Ohio, and Carl C. Fischer, Philadelphia. Dr. Earl D. Osborne, Buffalo, will open the meeting on industrial dermatitis, presented by the section on dermatology, with "A Therapeutic Armamentarium for the Treatment of Skin Diseases in Industrial Medical Practice." The section on surgery will have as its first speaker Dr. Harris B. Shumacker Jr., Indianapolis, who will consider surgery of the great blood vessels. Dr. Martin Cherkasky, New York, will discuss "Practical Solutions" at the end of the program on chronic illness problems and solutions, presented Thursday afternoon by the section on preventive medicine and public health. "Physical Medicine and Rehabilitation—Its Significance and Relationship to Other Specialties in Medicine" will be discussed by Dr. Frank H. Krusen, Rochester, Minn., Thursday afternoon before the section on physical medicine and rehabilitation.

Philadelphia

Dr. Esmond Long Retires.—Dr. Esmond R. Long, director of medical research for the National Tuberculosis Association and director of the Henry Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis of the University of Pennsylvania, retired from these positions July 1 to devote his time to research and writing. Three years ago Dr. Long resigned as executive secretary of the American Trudeau Society and as editor-in-chief of the *American Review of Tuberculosis and Pulmonary Diseases.* A prolific writer, he is the author of more than 250 papers and articles as well as "A History of Pathology," published in 1928, and "The Chemistry of Tuberculosis," in which he collaborated with Dr. H. Gideon Wells. Dr. and Mrs. Long plan to make their home in Pedlar Mills, Va.

Personal.—Dr. Harry E. Bacon was recently made an honorary fellow of the Japanese College of Surgeons and the Chiba Surgical Society.——Dr. Philip R. Trommer, associate in medicine at Woman's Medical College of Pennsylvania, has been elected president of the Eastern Pennsylvania chapter of the Arthritis and Rheumatism Foundation at the annual meeting.——At its annual meeting in Los Angeles, the American Urological Association awarded first prize to Dr. William C. Shoemaker, a resident surgeon at Hahnemann Medical College and Hospital, for his essay, "Reversed Seromuscular Grafts in Urinary Tract Reconstruction."——Dr. Mollie A. Geiss, professor of pathology, Woman's Medical College of Pennsylvania, has resigned after 33 years of service on the faculty. She will be succeeded by Dr. Isadore N. Dubin, presently with the Armed Forces Institute of Pathology, Washington, D. C., as chief of the hepatic pathology section.——Dr. Carl F. Schmidt, professor of pharmacology, University of Pennsylvania School of Medicine, lectured at the National Defense Medical Center in Formosa during July, under the auspices of the American Bureau for Medical Aid to China, of which he is a director. The bureau gives assistance to the National Defense Medical Center through provision of fellowships, equipment, and medical journals. Dr. Schmidt is past-president of the American Society of Pharmacology.——Dr. Gilbert B. Meyers, medical supervisor of the Philadelphia plant of the Electric Storage Battery Company, received a certificate for outstanding work in industrial medicine at the annual meeting of the Industrial Medical Association in Buffalo April 27. Under Dr. Meyer's leadership a control program at the Electric Storage Battery Company's plant is reported to have virtually eliminated loss of industrial working time due to lead exposure.

RHODE ISLAND

Fiske Fund Contest.—The trustees of the Fiske Fund of the Rhode Island Medical Society will award $350 for the best dissertation worthy of recompense on the subject "Use of Radio-Active Isotope in the Treatment and Investigation of Disease." Entries should be sent to Secretary to the Trustees, John E. Farrell, Sc.D., 106 Francis St., Providence 3, on or before Feb. 2, 1956, with a motto inscribed, and should be accompanied by a sealed envelope bearing the same motto on the outside and the sender's name and address within. Manuscripts must be typewritten, double-spaced on standard typewriter paper, and should not exceed 10,000 words.

SOUTH CAROLINA

Anniversary Issue.—The *Journal of the South Carolina Medical Association* for June is the 50th anniversary number. In addition to articles on medical progress in various fields, it contains a history of medical journalism in South Carolina by Dr. Joseph I. Waring, Charleston.

SOUTH DAKOTA

State Medical Election.—Newly elected officers of the South Dakota State Medical Association include: Dr. F. Daniels Gillis Sr., Mitchell, president; Dr. Alonzo P. Peeke, Volga, president-elect; Dr. Michael M. Morrissey, Pierre, vice-president; and Dr. Arthur P. Reding, Marion, secretary-treasurer.

TENNESSEE

Society News.—Newly elected officers of the Tennessee Radiological Society include: Dr. John M. Wilson, Memphis, president; Dr. Ben R. Mayes, Nashville, vice-president; and Dr. George K. Henshall, Chattanooga, secretary-treasurer.

Cardiovascular Lectureship.—The Memphis Heart Association has established an annual cardiovascular lectureship at the University of Tennessee College of Medicine, Memphis. The guest lecturer, to be paid by the association and selected by representatives of the association and the university, will lecture in the fall as a part of the teaching program for medical students. Members of the staff of John Gaston Hospital and Memphis physicians will be invited to attend. The lectureship will pertain to the broad field of cardiovascular problems.

TEXAS

Portrait of Dr. Cary.—A portrait of the late Dr. Edward H. Cary, 85th President of the American Medical Association and president and founder of the Southwestern Medical Foundation, was recently hung in the conference room of the new permanent headquarters of the foundation in the Medical Arts Building, Dallas. The portrait by Dmitri Vail was commissioned by *The Times Herald.*

Fiftieth Anniversary Number.—The July issue of the *Texas State Journal of Medicine* commemorates the 50th anniversary of that periodical. It contains an article on medical and surgical progress from 1905 to 1955 by Dr. Thomas H. Thomason, Fort Worth, and "Medicine in an Industrial Civilization" by Dr. Walter B. Martin, Norfolk, Va., immediate past-president of he A. M. A. This paper was read by Dr. Martin at the annual session of the Texas Medical Association April 25.

WASHINGTON

Blood Vessel Bank.—The Washington State Heart Association has established a blood vessel bank that will provide blood vessels free of charge to physicians. Should a suitable donor become available somewhere in the state, information pertinent to procurement, preservation, and storage may be obtained by contacting Drs. Allan W. Lobb, Dean K. Crystal, or Clyde L. Wagner, in Seattle, at 1110 Harvard Ave. (Ca. 3663), or by calling the association. Requests for grafts should be directed o the same places.

WEST VIRGINIA

Society News.—The recently organized West Virginia Pediatric Society held its first scientific meeting at the Daniel Boone Hotel, Charleston, April 15. Among the out-of-state speakers were Drs. Frank Burke, Washington, D. C.; Samuel Livingston, Baltimore; and James B. Arey, Philadelphia. Officers of the society are: Dr. Thomas G. Potterfield, Charleston, president; Dr. Warren D. Leslie, Wheeling, vice-president; and Dr. Helen B. Fraser, Charleston, secretary-treasurer.

Degree in Speech Correction.—The department of speech of West Virginia University, Morgantown, has been authorized by the graduate school of the university to offer a course of study leading to the master of science degree in speech correction and audiology. Students holding a baccalaureate degree who do not have the undergraduate hours in speech presently required for entrance to the master of arts program in speech will be admitted to the course. The curriculum established for the achievement of the degree includes basic and advanced courses in speech correction, pathology, audiology, and psychology, plus supervised clinical experience. Information may be obtained by writing the Head, Department of Speech, West Virginia University, Morgantown.

ALASKA

Medical Election.—Newly elected officers of the Alaska Territorial Medical Association include Dr. Milo H. Fritz, Anchorage, president; Dr. Louis A. Salazar, Ketchikan, first vice-president; Dr. Hugh B. Fate, Fairbanks, second vice-president; and Dr. Robert B. Wilkins, Anchorage, secretary-treasurer.

GENERAL

New Publication on Criminal Psychodynamics.—Dr. Benjamin Karpman of Saint Elizabeths Hospital, Washington 20, D. C., is editor of the *Archives of Criminal Psychodynamics,* a cooperative enterprise devoted to the encouragement of research in the field of criminal behavior. Volume 1 contains the editor's article, "Criminal Psychodynamics: A Platform." Manuscripts and correspondence should be addressed to the editor.

Medical Electronics Sessions.—Two medical electronics sessions will be held during the meeting of the West Coast Institute of Radio Engineers in San Francisco Aug. 24-26. On Thursday a medical and engineering symposium on instrumentation will be held at 7:30 p. m. in room 301 at the civic auditorium. Participants will include Drs. Sydney F. Thomas, Palo Alto (Calif.) Clinic; Herbert N. Hultgren, Stanford University Hospital, San Francisco; and Tracy Jackson Putnam, Cedars of Lebanon Hospital, Los Angeles. There is no registration fee for either event. Members of the medical profession are invited.

Meeting on Physical Medicine.—The American Congress of Physical Medicine and Rehabilitation will hold its 33rd annual scientific and clinical session at the Hotel Statler, Detroit, Aug. 28-Sept. 2. The presidential address will be delivered Tuesday at 2 p. m. by Dr. William D. Paul, Iowa City, after which the following symposium on rehabilitation of injured workers will be moderated by Dr. Howard A. Rusk, New York:

Mobilization Schedule of Common Fractures, C. Leslie Mitchell, Detroit.
The Amputee in Industry—A Follow-Up Study, Charles Long II, Detroit.
Testing and Training Work Capacity, Bruce H. Young, Malton, Ontario, Canada.
The Industrial Physician in Rehabilitation, Earle A. Irvin, Detroit.
Management's Problems in Placement of Handicapped Workers, Mr. Earl R. Bramblett, Detroit.
Role of the Federal Government in Vocational Rehabilitation, Miss Mary Switzer, Washington, D. C.

Wednesday at 9 a. m. Dr. Jacob Meislin, Montrose, N. Y., will moderate a symposium, "Contribution of Psychiatry to Physical Medicine and Rehabilitation," in which the participants will be Dr. William Benham Snow, New York, Dr. A. Ray Dawson, Richmond, Va., and (by invitation) Drs. John C. Nemiah, Boston, and Saul H. Fisher, New York. The Wednesday afternoon session will be devoted to a symposium on rehabilitation centers, including six presentations by invitation. Dr. Ralph E. DeForest, Secretary, and Dr. Frederic T. Jung, Assistant Secretary and Director of Physical Laboratory, A. M. A. Council on Physical Medicine and Rehabilitation, Chicago, will serve as discussants for papers to be presented during the opening general scientific session Tuesday morning. The fifth John Stanley Coulter Memorial Lecture is scheduled for Thursday at 2 p. m. (speaker to be announced).

Society News.—Newly elected officers of the **American Society for Pharmacology and Experimental Therapeutics** include: Dr. Harry Beckman, Milwaukee, president-elect; Dr. Carl C. Pfeiffer, Emory University, Ga., secretary; and Dr. James M. Dille, Seattle, treasurer.——Officers of the **Association of Food and Drug Officials of the United States** for 1955-1956 include: Mr. Eugene H. Holeman, Nashville, Tenn., president; Mr. James M. Doughty Jr., Santa Fe, N. Mex., vice-president; and Mr. Evan Wright, Topeka, Kan., secretary-treasurer.——The **Western Industrial Medical Association** recently elected the following Los Angeles physicians: Packard Thurber Jr., president; Douglas D. McKinnon, vice-president; Edward J. Zaik, secretary; and Clarence L. Lloyd, treasurer.——Newly elected officers of the **National Tuberculosis Association** include: Mr. Edward T. Fagan, Brooklyn, N. Y., president; Dr. Howard W. Bosworth, Los Angeles, president-elect; Dr. John D. Steele, Milwaukee, and Mr. Peter W. James, Des Moines, vice-presidents; Mrs. Morrell De Reign, Caruthersville, Mo., secretary; and Collier Platt, New York, treasurer.——Newly elected officers of the **American Therapeutic Society** include: Dr. Fred E. Ball, Chicago, president; Drs. Gerald H. Pratt, New York, Robert J. Coffey, Washington, D. C., and L. Clagett Beck, Honolulu, Hawaii, first, second, and third vice-presidents respectively; Dr. Oscar B. Hunter Jr., Washington, D. C., secretary; and Dr. Joseph A. Davis, Chicago, treasurer.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

	July 30, 1955		
Area	Paralytic Type	Total Cases Reported	July 31, 1954, Total
New England States			
Maine	1	2	..
New Hampshire	..	16	1
Vermont	..	4	1
Massachusetts	111	204	9
Rhode Island	3	8	2
Connecticut	12	29	8
Middle Atlantic States			
New York	22	65	56
New Jersey	..	11	19
Pennsylvania	..	27	30
East North Central States			
Ohio	9	38	60
Indiana	5	22	30
Illinois	11	54	78
Michigan	11	50	78
Wisconsin	34	56	17
West North Central States			
Minnesota	8	24	36
Iowa	9	27	80
Missouri	4	6	19
North Dakota	2	3	7
South Dakota	..	1	3
Nebraska	7	19	23
Kansas	1	12	42
South Atlantic States			
Delaware	1	2	4
[illegible]	5	9	3
[illegible]	..	..	4
Virginia	5	21	28
West Virginia	1	4	8
North Carolina	7	22	55
South Carolina	3	8	24
Georgia	2	5	36
Florida	1	11	48
East South Central States			
Kentucky	6	17	50
Tennessee	2	13	31
Alabama	3	8	20
Mississippi	5	8	43
West South Central States			
Arkansas	7	11	20
Louisiana	8	9	34
Oklahoma	5	27	40
Texas	20	71	163
Mountain States			
Montana	1	1	2
Idaho	2	7	3
Wyoming	..	3	4
Colorado	5	9	11
New Mexico	No report	No report	6
Arizona	..	2	9
Utah	..	..	4
Nevada	..	1	5
Pacific States			
Washington	8	12	11
Oregon	13	17	10
California	29	57	222
Territories and Possessions			
Alaska	2	2	15
Hawaii	3	3	3
Puerto Rico	No report	No report	..
Total	394	1,038	1,515

FOREIGN

Poliomyelitis Program in Israel.—According to the *Hadassah Newsletter*, published by the Women's Zionist Organization of America, poliomyelitis, which previously had been negligible, in 1950 affected 1,604 children in Israel, paralyzing over 80%. This was a rate of 14.5 cases per 10,000 population, whereas the average annual incidence in the United States was 2 to 3 cases per 10,000 persons. Since 1950 there have been about 800 new cases in Israel every summer, an incidence of 5 per 10,000 (taking into account the increase in population), or twice the rate of the United States. Whereas, in America, children of the first grades in school are the most affected, in Israel almost all the sufferers are infants, 79% of all the afflicted children being under 3 years of age and 92% under 5 years. In Jerusalem, where a severe outbreak occurred in 1953 (220 cases were reported among a population of 150,000), the acute cases are cared for in the special isolation station of the Shaare Zedek Hospital. Severely handicapped children are admitted as in-patients to the Hospital for Crippled Children in Jerusalem. The Hebrew University-Hadassah Medical School virus research laboratory recently received a research grant from the World Health Organization and was named the WHO Regional Polio Research Laboratory for the Eastern Mediterranean.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

American Medical Association Public Relations Institute, Drake Hotel, Chicago, Aug. 31- Sept. 1. Mr. Leo E. Brown, 535 N. Dearborn St., Chicago 10, Director.

National Conference on Physicians and Schools, Moraine-on-the-Lake Hotel, Highland Park, Ill., Oct. 12-14. Dr. W. W. Bauer, 535 N. Dearborn St., Chicago, Director.

Academy of Psychosomatic Medicine, Hotel Plaza, New York, Oct. 6-8. Dr. Ethan Allan Brown, 75 Bay State Road, Boston 15, Secretary.

American Academy for Cerebral Palsy, Claridge Hotel, Memphis, Tenn., Oct. 10-12. Dr. Robert A. Knight, 869 Madison Ave., Memphis 3, Tenn., Secretary.

American Academy of Ophthalmology and Otolaryngology, Palmer House, Chicago, Oct. 9-14. Dr. W. L. Benedict, 100 First Avenue Bldg., Rochester, Minn., Executive Secretary.

American Academy of Pediatrics, Palmer House, Chicago, Oct. 3-6. Dr. E. H. Christopherson, 610 Church St., Evanston, Ill., Executive Secretary.

American Association of Medical Record Librarians, LaSalle Hotel, Chicago, Oct. 3-7. Miss Doris Gleason, 510 N. Dearborn St., Chicago 10, Executive Director.

American Association of Nursing Homes, Hotel Muehlebach, Kansas City, Mo., Sept. 19-21. Mr. Ira O. Wallace, P.O. Box 366, New Castle, Ky., Secretary.

American Association of Obstetricians and Gynecologists, The Homestead, Hot Springs, Va., Sept. 8-10. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

American College of Hospital Administrators, Convention Hall, Atlantic City, N. J., Sept. 17-19. Mr. Dean Conley, 620 North Michigan Ave., Chicago 11, Executive Director.

American Congress of Physical Medicine and Rehabilitation, Hotel Statler, Detroit, Aug. 28-Sept. 2. Dr. Frances Baker, 30 North Michigan Ave., Chicago 2, Secretary.

American Fracture Association, Hotel Fontainebleau, Miami Beach, Fla., Sept. 19-22. Dr. Homer D. Junkin, Paris Hospital, Paris, Ill., Secretary.

American Hospital Association, Traymore Hotel, Atlantic City, N. J., Sept. 19-22. Dr. Edwin L. Crosby, 18 East Division St., Chicago 10, Director.

American Medical Writers' Association, Jefferson Hotel, St. Louis, Sept. 30-Oct. 1. Dr. Harold Swanberg, P.O. Drawer 110, Quincy, Ill., Secretary.

American Physiological Society Fall Meeting, Tufts College, Medford, Mass., Sept. 6-9. Dr. Allan C. Burton, Univ. of Western Ontario, London, Ont., Canada, Secretary.

American Roentgen Ray Society, Palmer House, Chicago, Sept. 20-23. Dr. Barton R. Young, Germantown Hospital, Philadelphia 44, Secretary.

American Society of Plastic and Reconstructive Surgery, Atlantic City, N. J., Sept. 25-30. Dr. Kenneth L. Pickrell, Duke Hospital Durham, N. C., Secretary.

Association of American Physicians and Surgeons, Chicago, Oct. 7-8. Mr. Harry E. Northam, 185 N. Wabash Ave., Chicago 1, Executive Secretary.

Biological Photographic Association, Wisconsin Hotel, Milwaukee, Aug. 30-Sept. 2. Miss Jane H. Waters, Box 1668, Grand Central P.O., New York 17, Executive Secretary.

Central Association of Obstetricians and Gynecologists, Deshler-Hilton Hotel, Columbus, Ohio, Oct. 5-8. Dr. Edwin J. DeCosta, Suite 602, 116 S. Michigan Ave., Chicago 3, Secretary.

Clinical Orthopaedic Society, Skirvin Hotel, Oklahoma City, Sept. 30-Oct. 1. Dr. Marcus J. Stewart, 869 Madison Ave., Memphis, Tenn., Executive Secretary.

College of American Pathologists, Drake Hotel, Chicago, Oct. 10. Dr. Arthur H. Dearing, 203 N. Wabash Ave., Chicago 1, Executive Secretary.

Colorado State Medical Society, Shirley-Savoy Hotel, Denver, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2, Executive Secretary.

District of Columbia, Medical Society of the, Hotel Statler, Washington, D. C., Oct. 10-12. Mr. Theodore Wiprud, 1718 M St., N.W., Washington 6, D. C., Executive Director.

Industrial Health Conference, Shamrock Hotel, Houston, Texas, Sept. 22-23. Dr. Sidney Schnur, 411 Medical Arts Bldg., Houston 2, Texas, Chairman.

Kansas City Southwest Clinical Society, Municipal Auditorium, Kansas City, Mo., Oct. 3-6. Dr. W. M. Kitchen, 306 E. Twelfth St., Kansas City 6e, Mo., Secretary.

Kentucky State Medical Association, Louisville, Sept. 27-29. Mr. J. P. Sanford, 620 S. Third St., Louisville, Executive Secretary.

Michigan State Medical Society, Pantlind Hotel, Grand Rapids, Sept. 26-30. Dr. L. Fernald Foster, 606 Townsend St., Lansing 5, Secretary.

MIDWEST CONFERENCE ON RHEUMATIC DISEASES, Henry Ford Hospital, Detroit, Oct. 5. Mr. Lewis S. Robinson, 7338 Woodward Ave., Detroit 2, Secretary.

MISSISSIPPI VALLEY MEDICAL SOCIETY, Jefferson Hotel, St. Louis, Sept. 28-30. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

MISSISSIPPI VALLEY TRUDEAU SOCIETY, Hotel Savery, Des Moines, Iowa, Oct. 14. Dr. Harold G. Curtis, Sunny Acres, Cuyahoga County Tuberculosis Hospital, Cleveland 22, Chairman, Program Committee.

MONTANA MEDICAL ASSOCIATION, Baxter Hotel, Bozeman, Sept. 15-18. Mr. L. R. Hegland, P.O. Box 1692, Billings, Executive Secretary.

NEW ENGLAND HEALTH INSTITUTE, Colby College, Waterville, Me., Aug. 30-Sept. 1. Dr. Edward W. Colby, City of Portland Health Dept., Portland, Me., Chairman.

NEW HAMPSHIRE MEDICAL SOCIETY, Mt. Washington Hotel, Bretton Woods, Sept. 29-Oct. 1. Dr. Warren H. Butterfield, 18 School St., Concord, Secretary.

NORTH TEXAS-SOUTHERN OKLAHOMA FALL CLINICAL CONFERENCE, Wichita Falls, Tex., Sept. 17. Dr. E. C. Bebb, Broad St., Wichita Falls, Tex., Chairman.

OREGON STATE MEDICAL SOCIETY, Hotel Heathman, Portland, Sept. 28-Oct. 1. Dr. Richard R. Carter, 1020 S.W. Taylor St., Portland 5, Secretary.

PACIFIC DERMATOLOGIC ASSOCIATION, Mexico, D. F., Mexico, Aug. 22-24. Dr. Ben A. Newman, 436 N. Roxbury Drive, Beverly Hills, Calif., Secretary.

PENNSYLVANIA, MEDICAL SOCIETY OF THE STATE OF, William Penn Hotel, Pittsburgh, Sept. 18-23. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

POSTGRADUATE ASSEMBLY IN ENDOCRINOLOGY AND METABOLISM, Indianapolis, Sept. 26-Oct. 1. Dr. John J. Mahoney, Assistant Dean, Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis 7.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS:

- Jamestown, N. D., Sept. 10. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.
- Madison, Wis., Oct. 15. Dr. Howard Wakefield, 122 S. Michigan Ave., Chicago 3, Governor.

SOCIETY OF GENERAL PHYSIOLOGISTS, Marine Biological Laboratory, Woods Hole, Mass., Sept. 9-10. Dr. A. M. Shanes, National Institutes of Health, Bethesda 14, Md.

SOUTHWESTERN SURGICAL CONGRESS, Muehlebach Hotel, Kansas City, Mo., Sept. 5-7. Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secretary.

TENNESSEE VALLEY MEDICAL ASSEMBLY, Read House, Chattanooga, Tenn., Oct. 3-4. Dr. Harry E. Jones, 109 Medical Arts Bldg., Chattanooga 2, Tenn., Secretary.

U. S. CHAPTER, INTERNATIONAL COLLEGE OF SURGEONS, Convention Hall, Philadelphia, Sept. 12-15. Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago 10, Secretary.

UTAH STATE MEDICAL ASSOCIATION, Union Bldg., Salt Lake City, Sept. 8-10. Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2, Executive Secretary.

VERMONT STATE MEDICAL SOCIETY, Mt. Washington Hotel, Bretton Woods, N. H., Sept. 29-Oct. 1. Dr. James P. Hammond, 337 South St., Bennington, Secretary.

WASHINGTON STATE MEDICAL ASSOCIATION, Olympic Hotel, Seattle, Sept. 11-14. Dr. Frederick A. Tucker, 1309 Seventh Ave., Seattle 1, Secretary.

WESTERN ASSOCIATION OF RAILWAY SURGEONS, Las Vegas, Nev., Sept. 22-24. Dr. Leo L. Stanley, 1322 Fifth Ave., San Rafael, Calif., Secretary.

FOREIGN AND INTERNATIONAL

AUSTRALASIAN MEDICAL CONGRESS, Sydney, N.S.W., Australia, Aug. 20-27. For information write: Federal Council of the B.M.A. in Australia, 135 Macquaire St., Syndey, N.S.W., Australia.

CANADIAN SOCIETY FOR THE STUDY OF FERTILITY, Royal York Hotel, Toronto, Ont., Canada, Oct. 6-8. Dr. Earl R. Plunkett, 469 Waterloo St., London, Ont., Canada, Secretary.

CONGRESS OF INTERNATIONAL ASSOCIATION OF LIMNOLOGY, Helsinki, Finland, July 26-Aug. 7, 1956. For information address: Dr. H. Luther, Snellmansgatan 16 C 36, Helsinki, Finland.

CONGRESS OF INTERNATIONAL SOCIETY FOR RESEARCH ON ANESTHESIA, Miami Beach, Fla., U.S.A., Mar. 12-15, 1956. For information write: Dr. R. J. Whitacre, 13951 Terrace Road, Cleveland 12, Ohio, U. S. A.

CONGRESS OF INTERNATIONAL UNION OF RAILWAY MEDICAL SERVICES, Dubrovnik, Yugoslavia, Sept. 19-24. Dr. Jovanovic, Head Office, Yugoslav Railway, Belgrade, Yugoslavia, President.

CONGRESS OF INTERNATIONAL UNION AGAINST VENEREAL DISEASES, Naples, Italy, Sept. 25-28. For information address: Prof. Monacelli, University of Naples, Dept. of Dermatology, Naples, Italy.

INTERNATIONAL ACADEMY OF LEGAL AND SOCIAL MEDICINE, Plenary Conference, Genoa, Italy, Oct. 13-17. Prof. Domenico Macaggi, Institut de Medicine legale, Universite de Genes, Genes, Italy, President.

INTERNATIONAL CONFERENCE OF MEDICAL LIBRARIANS AND REFERENCE LIBRARIANS, University Hall, Brussels, Belgium, Sept. 10. For information address: Miss Ch. de Looze, Librarian % Oeuvre Nationale Belge de Defense contra la Tuberculose, 56, rue de la Concorde, Brussels, Belgium.

INTERNATIONAL CONGRESS OF ALLERGOLOGY, Rio de Janeiro, Brazil, S. A., Nov. 6-13. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7^{e}, France, Secretary General.

INTERNATIONAL CONGRESS OF ANGIOLOGY AND HISTOPATHOLOGY, Fribourg, Switzerland, Sept. 2-5. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8^{e}, France.

INTERNATIONAL CONGRESS OF CRIMINOLOGY, London, England, Sept. 11-18. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

INTERNATIONAL CONGRESS OF EUROPEAN SOCIETY OF HAEMATOLOGY, Freiburg i,Br., Germany, Sept. 20-24. Prof. Dr. L. Heilmeyer, Hugstetter Strasse 55, Freiburg i,Br., Germany, Chairman.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Buenos Aires, Argentina, S. A., Nov. 19-24, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF INTERNATIONAL SOCIETY OF BRONCHOESOPHAGOLOGY, Buenos Aires, Argentina, S. A., Oct. 28-29. Dr. Juan Carlos Arauz, Cangallo 4015, Buenos Aires, Argentina, S. A., Secretary General.

INTERNATIONAL CONGRESS OF LIBRARIANSHIP AND DOCUMENTATION, Brussels, Belgium, Sept. 11-18. For information write: Dr. A. C. Breycha-Vauthier, Librarian, United Nations, Geneva, Switzerland.

INTERNATIONAL CONGRESS OF MEDICAL PROFESSIONAL JURISDICTION, MEDICAL ETHICS, AND COMPARATIVE MEDICAL LAW, Paris, France, Sept. 30-Oct. 3. Dr. J. R. DeBray, Conseil National de L'Ordre des Medécins, 60, Boulevard Latour-Maubourg, Paris 7e, France, Secretary General.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, International Committee of Military Medicine and Pharmacy, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

INTERNATIONAL CONGRESS OF NEO-HIPPOCRATIC MEDICINE, Montecatini, Terme, Italy, May 20-22, 1956. Prof. P. Delore, 13 rue Jarente, Lyon, France, Secretary-General.

INTERNATIONAL CONGRESS OF NEUROPATHOLOGY, London, England, Sept. 12-17. Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London, W.9, England, Secretary.

INTERNATIONAL CONGRESS OF PAEDIATRICS, Copenhagen, Denmark, July 22-27, 1956. Professor P. Plum, Rigshospitalet, Copenhagen, Denmark, President.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, Copenhagen, Denmark, August 20-24, 1956. Dr. B. Strandberg, Kobenhavns amts sygehus i Gentofte, Dept. of Rheumatology and Physical Medicine, Hellerup, Denmark, Honorable Secretary.

INTERNATIONAL CONGRESS OF RADIOLOGY, Mexico, D. F., Mexico, July 22-28, 1956. Dr. Jose Noriega, Tepic 126 (2e piso), Mexico, D. F. 7, Mexico, Secretary General.

INTERNATIONAL CONGRESS ON URINARY LITHIASIS, Evian, France, Sept. 2-4. Mr. Rossollin-Grandville, Direction Cachet, Evian (Hte-Savoie), France, Secretary General.

INTERNATIONAL CONGRESS OF WORLD CONFEDERATION FOR PHYSICAL THERAPY, New York, New York, U. S. A., June 17-23, 1956. For information address: Miss Mildred Elson, American Physical Therapy Association, 1790 Broadway, New York 19, New York, U. S. A.

INTERNATIONAL GENERAL MEDICAL CONGRESS, University of Rosario Medical College, Rosario, Argentina, S. A., Nov. 7-12. Dean Jose Imhoff, Santa Fé 3100, Rosario, Argentina, S. A., Chairman.

INTERNATIONAL MEDICAL CONGRESS, Verona, Italy, Sept. 1-4. For information write: c/o Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

INTERNATIONAL OFFICE OF DOCUMENTATION OF MILITARY MEDICINE, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

INTERNATIONAL PHYSIOLOGICAL CONGRESS, Brussels, Belgium, July 29-Aug. 5, 1956. For information address: Prof. J. Reuse, Faculte de Medicine et de Pharmacie, 115 Boulevard de Waterloo, Brussels, Belgium.

INTERNATIONAL SOCIETY FOR THE STUDY OF BIOLOGICAL RHYTHMS, Stockholm, Sweden, Sept. 15-17. For information write: Prof. Ture Petrén, Karolinska Institutet, Stockholm 60, Sweden.

INTERNATIONAL VITAMIN E CONGRESS, Cini Foundation, Island of San Giorgio Maggiore, Venice, Italy, Sept. 5-8. Prof. Emilio Raverdino, via Pietro Verri 4, Milano, Italy, Secretary.

NEURORADIOLOGIC SYMPOSIUM, London, England, Sept. 13-17. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

PAN AMERICAN CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Mendoza City, Argentina, S. A., Oct. 22-26. For information address: Secretary, Caseros Av. 2154, Buenos Aires, Argentina, S. A.

PAN AMERICAN CONGRESS OF OPHTHALMOLOGY, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, Secretary General.

PAN AMERICAN MEDICAL SOCIAL CONVENTION, Bogota, Colombia, S. A., Oct. 15-22. Dr. Leopoldo E. Araujo, Avenida de los Presidentes Num. 506, Apartado 2589, La Habana, Cuba, Secretary.

PAN AMERICAN MEDICAL WOMEN'S ALLIANCE, Santiago, Chile, March 6-13, 1956. For information address: Dr. Eva Cutright, 458 Beall Ave., Wooster, Ohio, U. S. A.

VENEZUELAN CONGRESS OF MEDICAL SCIENCES, Caracas, Venezuela, S. A., Nov. 18-26. Dr. A. L. Briceno Rossi, Apartado 4412, Ofic. del Este, Caracas, Venezuela, S. A., Secretary General.

WORLD CONGRESS OF ANESTHESIOLOGISTS, Scheveningen, Netherlands, Sept. 5-10. For information write: Mr. W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven, Netherlands.

WORLD CONGRESS ON FERTILITY AND STERILITY, Naples, Italy, May 18-26, 1956. For information address: Prof. G. Tesauro, S. Andrea della Dame, 19, Naples, Italy.

WORLD MEDICAL ASSOCIATION, Vienna, Austria, Sept. 20-26. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary General.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part I*, Sept. 6-7. Candidates may file applications at any time, but the National Board must receive them at least six weeks before the date of the examination. New candidates should apply by formal registration; registered candidates should notify the board by letter and forward their fees. Exec. Sec., Dr. John B. Hubbard, 133 South 36th St., Philadelphia 4.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* New York City, Oct. 23-27. *Written.* Various locations in United States and Canada, July 20, 1956. Final date for filing application is Jan. 20. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral.* Washington, D. C., Oct. 14-16. Final date for filing application was March 15. Sec., Dr. B. M. Kesten, One Haven Ave., New York 32, N. Y.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Portland, Ore., Sept. 14-16; Chicago, Nov. 30-Dec. 1. *Subspecialties. Cardiovascular Disease.* Chicago, Nov. 30. The closing date for acceptance of applications for gastroenterology was Feb. 1, and for cardiovascular disease the closing date was June 1. Exec. Sec., Dr. William A. Werrell, 1 West Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* New Haven, November. Oral examinations given in Spring and Fall. Final date for filing application for the Spring examination is October 1; for the Fall examination April 1. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written Examination and submission of Case Reports. Part I.* Various locations in United States and Canada, Feb. 3, 1956. Final date for filing application is Oct. 1. *Oral and Pathological Examinations. Part II.* Chicago, May 11-20, 1956. Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Practical Examination.* Chicago, Oct. 3-7. Final date for filing application for 1955 practical examination was July 1, 1954. *Written.* January, 1956. Final date for filing application was July 1. *Practical Examination.* St. Louis, Oct. 20-25. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Final date for filing application for the Part II examination to be given in January 1956 is Aug 15. Sec., Dr. Harold A. Sofield, 116 South Michigan Ave., Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, Oct. 3-7. Final date for filing application is April. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

AMERICAN BOARD OF PATHOLOGY: *Written and Practical.* Chicago, Oct. 6-8. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Chicago, Oct. 7-9; and Washington, D. C., Dec. 2-4. Admin. Sec., Mrs. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION. *Parts I and II.* Chicago, June 16-17. Sec., Dr. Earl C. Elkins, 200 First St., S. W., Rochester, Minn.

AMERICAN BOARD OF PLASTIC SURGERY: *Oral and Written.* Philadelphia, Sept. 22-24. Corres. Sec., Miss Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

AMERICAN BOARD OF PREVENTIVE MEDICINE: *Certification in Public Health.* Kansas City, Mo., Nov. 10-12. Sec.-Treas., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore 5.

AMERICAN BOARD OF PROCTOLOGY: *Part II.* Philadelphia, Sept. 17. Sec., Dr. Stuart T. Ross, 131 Fulton Ave., Hempstead, N. Y.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: San Francisco, Oct. 17-18; New York City, December, Philadelphia, April 16-18, 1956. Sec., Dr. David A. Boyd, 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: Chicago, Dec. 4. Final date for filing applications for the fall examination was July 1. Candidates who will complete their training by Dec. 31 will be eligible to appear for this examination. Sec., Dr. B. R. Kirklin, Kahler Hotel Bldg., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Part I.* Centers throughout the United States, in Europe and in the Far East, Oct. 26 and March 28. Closing date for the October examination was July 1 and for the March examination is December 1. *Part II.* Buffalo, Sept. 26-27; Chicago, Oct. 27-28; New York City, Nov. 14-15; St. Louis, Dec. 12-13; New Orleans, Jan. 16-17; Los Angeles, Feb. 13-14; San Francisco, Feb. 16-17; Durham, Mar. 12-13; Boston, May 14-15 and Philadelphia, June 4-5. Sec., Dr. John B. Flick, 255 S. Fifteenth St., Philadelphia 2.

THE BOARD OF THORACIC SURGERY: *Written.* Various Centers, Sept. 9. Final date for filing applications was July 1. Sec., Dr. Wm. M. Tuttle, 1151 Taylor Ave., Detroit 2.

MAGAZINE–TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Tuesday, Aug. 23

CBS-TV, 10:30 p. m. EDT. "The Search" presents a program filmed at Tulane University entitled "New Hope for the Mentally Ill."

Wednesday, Aug. 24

NBC-TV, 10 a. m. EDT. "Home's" report on "Medicine and Health" with Howard Whitman.

MAGAZINES

Parade, Aug. 21, 1955

"A Bandage You Spray On"

Hospitals now use a liquid plastic bandage that is sprayed on from a can.

Coronet, September, 1955

"Chemistry Is Curing Sterile Men," by Selwyn James

"Thanks to a new and effective treatment for male sterility developed by research doctors (Oreton—a synthetic version of testosterone propionate) many of the two million involuntarily childless husbands are offered an excellent chance of becoming parents. . . . Discarded years ago as worthless in the treatment of sterility problems, testosterone today is becoming a major tool because of its strange, delayed reaction when given in controlled dosages to sterility cases that previously have failed to respond to other therapies."

Family Circle, September, 1955

"The Low Days Are Looking Up," by Harold Mehling

A doctor at New York Medical College "evolved a carefully balanced formula that combined the most effective drugs that had been used against each of premenstrual tension's emotional and physical symptoms. For convenience it was put into the form of a coated tablet." After further investigations and tests, during which the doctor found improvement among 9 out of 10 of his patients, he submitted his findings to a research laboratory. Here a tablet was developed that now is available nationally in pharmacies.

Better Living, September, 1955

"Can Allergy Be Prevented," by Dr. Bret Ratner

A New York Medical College professor gives detailed information on allergy. He concludes: "As allergy research moves ahead, the chances are excellent that we will not only learn more about preventing and treating allergic ills but also acquire new insight into how our bodies may be helped to battle more successfully against a number of other ever-present threats, from rheumatism to the common cold."

"A Good Life for Tommy," by Genevieve Catalonotto as told to Ann Eliasberg

A mother tells of problems encountered in raising a Mongolian child.

DEATHS

Jack, Horace Wesley ⊕ Camden, N. J.; born in Collingswood, N. J., Feb. 6, 1894; Hahnemann Medical College and Hospital, Philadelphia, 1917; specialist certified by the American Board of Surgery; served in France during World War I; fellow of the American College of Surgeons and the International College of Surgeons; member of the Philadelphia Academy of Surgery, College of Physicians of Philadelphia, and the Society of Surgeons of New Jersey; past-president of the Camden County Medical Society and the West Jersey Medical Society; chairman of the cancer control committee of the Medical Society of New Jersey; vice-chairman of the medical advisory committee of New Jersey Division of the American Cancer Society; member and formerly chairman of the executive committee of the Camden County Cancer Society; on the staff of the West Jersey Hospital; consulting surgeon, Camden County General Hospital in Lakeland; died in the Graduate Hospital, Philadelphia, June 20, aged 61, of hemorrhage from esophageal varices and cirrhosis of the liver.

Cheney, Garnett ⊕ San Francisco; born in San Francisco May 31, 1899; Harvard Medical School, Boston, 1923; clinical professor of medicine at the Stanford University School of Medicine; past-president and since 1953 on the economics committee of the San Francisco County Medical Society, serving on its council from 1951 to 1953; charter member of the California Society of Internal Medicine; specialist certified by the American Board of Internal Medicine; member of the American Gastroenterological Association; fellow of the American College of Physicians; served during World Wars I and II; on the staffs of St. Joseph's and Children's hospitals; consultant at the Letterman Army Hospital and Veterans Administration Hospital; died June 16, aged 56, of carcinoma of the ascending colon.

Reed, Dudley Billings, Oberlin, Ohio; born in Medina, Ohio, 1878; Columbia University College of Physicians and Surgeons, New York City, 1908; health and physical education supervisor and teacher in the Asheville (N. C.) School from 1908 to 1910 and at the University of Rochester (N. Y.) in 1910-1911; joined the faculty of the University of Chicago School of Medicine in 1911 as assistant professor of physical culture, in 1913 became associate professor, and in 1927 professor of hygiene in the department of medicine and director of the student health department, from which positions he retired Sept. 30, 1945, and became professor of hygiene emeritus; on the board of governors of the Allen Hospital; died in Wentworth, N. H., June 29, aged 76, of coronary disease.

Haggart, William Waugh ⊕ Denver; born in Durango, Colo., Sept. 3, 1897; Harvard Medical School, Boston, 1922; formerly on the faculty of the University of Colorado School of Medicine; certified by the National Board of Medical Examiners; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; past-president of the Denver County Medical Society; formerly member of the board of directors of the National Society for the Control of Cancer; member of the medical staffs of St. Luke's and Children's hospitals; a visiting surgeon at Denver General Hospital; died in St. Luke's Hospital June 8, aged 57, of coronary thrombosis and arteriosclerosis.

Henry, M. Joseph ⊕ Louisville, Ky.; born in Louisville June 18, 1889; University of Louisville Medical Department, 1912; member of the founders group of the American Board of Surgery; past-president of the Jefferson County Medical Society; member of the Southern Surgical Association; on the board of governors of the American College of Surgeons; served during World War I; at one time a fellow in surgery at the Mayo Clinic in Rochester, Minn.; served as chairman of the city-county board of health; for many years on the staff of St. Joseph's Infirmary, where he died June 3, aged 65, of a heart attack.

Achilles, William Edward ⊕ Geneva, N. Y.; University of Buffalo (N. Y.) School of Medicine, 1919; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; interned at the Arnot-Ogden Memorial Hospital in Elmira; on the staffs of the Willard (N. Y.) State Hospital, Seneca Falls (N. Y.) Hospital, and the Geneva General Hospital; died May 28, aged 60, of coronary thrombosis.

Anders, Joseph Wesley ⊕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1890; an associate member of the American Medical Association; specialist certified by the American Board of Otolaryngology; served on the medical boards during World War I and the Spanish-American War; formerly on the faculty of the Temple University School of Medicine; on the staff of the Temple University Hospital; died June 17, aged 89.

Ball, John Maurice ⊕ Cincinnati; Eclectic Medical College, Cincinnati, 1926; member of the American Academy of General Practice; served during World War I; died July 2, aged 56, of acute myocardial infarction.

Behymer, Harry William ⊕ Springfield, Ohio; Eclectic Medical Institute, Cincinnati, 1895; died in the Masonic Home June 21, aged 81, of cerebral hemorrhage and arteriosclerosis.

Bell, Warren Watson ⊕ Vaughn, Wash.; Vanderbilt University School of Medicine, Nashville, Tenn., 1917; specialist certified by the American Board of Obstetrics and Gynecology; member of the Pacific Coast Society of Obstetrics and Gynecology; served during World War I; for many years on the staff of the Swedish Hospital in Seattle, where he died June 14, aged 60, of cerebral neoplasm.

Bott, Franklin Lucas, Lexington, Miss.; Memphis (Tenn.) Hospital Medical College, 1899; served as secretary of the Holmes County Medical Society; died in the Holmes County Community Hospital July 7, aged 83.

Bradshaw, Thomas Gavin ⊕ Wilson, N. C.; Medical College of Virginia, Richmond, 1909; died April 11, aged 72, of cerebral hemorrhage.

Carlisle, Glenn Myron, Kansas City, Mo.; Marion-Sims College of Medicine, St. Louis, 1901; veteran of the Spanish-American War; died in the Veterans Administration Hospital June 21, aged 83, of bronchopneumonia, uremia, and arteriosclerosis.

Clymer, V. Dale, Alexandria, Va.; College of Medical Evangelists, Loma Linda-Los Angeles, 1950; interned at the Washington Sanitarium and Hospital in Washington, D. C.; resident in pathology at the Youngstown (Ohio) Hospital; died June 24, aged 29, of coronary occlusion.

Cummings, Royal Edwin ⊕ Brooklyn, N. Y.; University of Nashville (Tenn.) Medical Department, 1903; on the staff of the Lutheran Hospital; died May 7, aged 73, of cancer.

Davis, James Wagner ⊕ Statesville, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1913; fellow of the American College of Surgeons; at one time vice-president of the Medical Society of the State of North Carolina; served during World War I; founder and chief surgeon of Davis Hospital; died May 31, aged 68.

Edwards, Daniel B. ⊕ Tyler, Ala.; Medical Department of the University of Alabama, Mobile, 1898; died June 28, aged 85, of congestive heart disease and arteriosclerosis.

Griffin, William Ray ⊕ Asheville, N. C.; Jefferson Medical College of Philadelphia, 1910; specialist certified by the American Board of Psychiatry and Neurology; member of the Southern Psychiatric Association and the American Psychiatric Association; past-president of the Buncombe County Medical Society; fellow of the American College of Physicians; owner of Appalachian Hall, where he died June 4, aged 73, of cerebral hemorrhage and arteriosclerosis.

⊕ Indicates Member of the American Medical Association.

Henderson, Okey Carl ⊕ Dayton, Ohio; Ohio State University College of Medicine, Columbus, 1917; served during World War I; died in the Miami Valley Hospital May 16, aged 65.

Henry, Zadok Purnell, Berlin, Md.; College of Physicians and Surgeons, Baltimore, 1902; one of the founders, president for many years, and on the board of directors of the Exchange and Savings Bank and the Building and Loan Association of Berlin; died May 16, aged 87, of chronic myocarditis.

Hervey, James Archer, West Allis, Wis.; Drake University College of Medicine, Des Moines, 1906; died June 23, aged 85, of arteriosclerosis.

Hewitt, Robert Smith ⊕ Lincoln Park, Mich.; Wayne University College of Medicine, Detroit, 1927; served during World War II; on the staffs of the Wyandotte General, Children's, and Delray General hospitals in Detroit; died in the Harper Hospital, Detroit, May 17, aged 54, of dissecting abdominal aortic aneurysm.

Hyer, Irving Goodrich ⊕ Clarendon, Pa.; University of Wooster Medical Department, Cleveland, 1901; for many years on the staff of the Warren (Pa.) General Hospital; died in Warren May 14, aged 80, of carcinoma of the bladder.

Joldersma, Ruelof Duiker ⊕ Commander, U. S. Navy, retired, Berkeley, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; entered the U. S. Navy in 1917 and retired June 30, 1938; recalled to active duty in November, 1940; promoted to commander in January, 1942; released to inactive duty in April, 1945; fellow of the American College of Surgeons; for a long time on the staff of the Herrick Memorial Hospital; died in Oakland June 22, aged 69, of subphrenic abscess.

Kessler, William Frederic ⊕ Howell, Mich.; Jefferson Medical College of Philadelphia, 1934; member of the American Trudeau Society; on the staff of the Michigan State Sanatorium; formerly practiced in Brooklyn, where he was on the staffs of the Methodist and Brooklyn Thoracic hospitals; died in the University Hospital, Ann Arbor, April 30, aged 48, of congestive heart disease.

Khamis, Joseph Abraham, Chicago; Chicago College of Medicine and Surgery, 1910; died July 2, aged 77.

Ladd, Louis Williams, Cleveland Heights, Ohio; Johns Hopkins University School of Medicine, Baltimore, 1899; member of the Cleveland Academy of Medicine; at one time on the faculty of Western Reserve University School of Medicine in Cleveland, where he served on the staff of the Lakeside Hospital, University Hospitals, and St. Vincent Charity Hospital; died June 28, aged 82.

Lane, Edward Huntington ⊕ Los Angeles; the Hahnemann Medical College and Hospital, Chicago, 1898; died in the Hollywood Presbyterian Hospital June 27, aged 80, of myocardial infarction.

Lee, Albert E., Illmo, Mo.; University of Arkansas School of Medicine, Little Rock, 1933; member of the Missouri State Medical Association; served during World War II; died June 3, aged 49.

Long, John Franklin, Harrison City, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1894; died March 13, aged 93, of arteriosclerosis.

Lutz, William Miller ⊕ Short Hills, N. J.; Jefferson Medical College of Philadelphia, 1936; member of the American Society of Anesthesiologists; chief anesthetist at Orange (N. J.) Memorial Hospital; died July 7, aged 44, of coronary heart disease.

Lynch, Robert Joseph ⊕ Bridgeport, Conn.; Bellevue Hospital Medical College, New York City, 1897; past-president of the board of health commissioners; died in the Bridgeport Hospital July 7, aged 82, of acute coronary thrombosis.

Mills, Frederick Hubbell ⊕ Lieutenant Colonel, U. S. Army, retired, Upper Darby, Pa.; Jefferson Medical College of Philadelphia, 1894; entered the regular Army in 1917; retired Sept. 30, 1932; served during World War II; died in the Veterans Administration Hospital, Philadelphia, June 2, aged 86, of arteriosclerotic heart disease.

Morris, Joseph Algernon, Franklinton, N. C.; University of Nashville (Tenn.) Medical Department, 1890; member of the Medical Society of the State of North Carolina; at one time health officer of Granville County; past-president and vice-president of the North Carolina Public Health Association; died in the Granville Hospital, Oxford, April 22, aged 81.

Mullins, William Leo ⊕ Pittsburgh; National University of Ireland, 1923; assistant professor of medicine at the University of Pittsburgh School of Medicine; member of the board of trustees of St. Vincent's College in Latrobe; on the staff of the Mercy Hospital; died May 8, aged 56, of coronary occlusion.

O'Farrell, Gerald D., Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1894; died June 21, aged 84, of a heart attack.

Paull, Frank Osborn ⊕ Marquette, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1909; an associate member of the American Medical Association; on the staff of St. Luke's Hospital; died July 2, aged 71, of malignancy of the colon.

Root, Joseph Lewry III ⊕ Santa Ana, Calif.; born in Pluto, Pa., July 24, 1908; New York Medical College, Flower and Fifth Avenue Hospitals, New York City, 1949; certified by the National Board of Medical Examiners; on the staff of the Orange (Calif.) County General Hospital, where he interned, and later served as assistant director of the tuberculosis pavilion; on the staffs of the Santa Ana (Calif.) Community Hospital, Hoag Memorial Hospital-Presbyterian in Newport Beach, and St. Joseph Hospital in Orange, where he died June 13, aged 47.

Rothwell, Herbert Thomas ⊕ Kahuku, Hawaii; University of Colorado School of Medicine, Denver, 1926; at one time an officer in the U. S. Navy; fellow of the American College of Surgeons; member of the Industrial Medical Association; died April 14, aged 53, of hemorrhage due to laceration of the scalp.

Skarperud, Arthur M. ⊕ Aberdeen, Wash.; University of Illinois College of Medicine, Chicago, 1924; served during World War I; past-president of the Grays Harbor County Medical Society; on the staff of St. Joseph Hospital; died June 20, aged 60, of injuries received in a tractor accident.

Slater, Harvey Maurice, Menlo Park, Calif.; Johns Hopkins University School of Medicine, Baltimore, 1915; died June 29, aged 69, of coronary occlusion.

Sparks, Clara Ellita Pratt, Gustine, Calif.; Cooper Medical College, San Francisco, 1907; died June 25, aged 74, of heart disease.

Story, Charles Butts ⊕ Bayside, N. Y.; University of the City of New York Medical Department, 1890; an associate member of the American Medical Association; past-president of the Queens Medical Society; formerly health officer of borough of Queens; served as chief surgeon and chief of staff of the Flushing (N. Y.) Hospital; a director of the First National Bank of Bayside; died in the Eastern Long Island Hospital in Greenpoint July 2, aged 91, of cerebral hemorrhage.

Stubenbord, Jess ⊕ Buffalo; University of Buffalo School of Medicine, 1937; specialist certified by the American Board of Surgery; served during World War II; fellow of the American College of Surgeons; on the staff of the Deaconess Hospital, where he died May 19, aged 49, of coronary thrombosis.

Twist, Earl Bancroft, Chatham, N. J.; New York University Medical College, New York City, 1898; member of the Medical Society of the State of New York; for many years examining physician for the Prudential Insurance Company; died in the Morristown (N. J.) Memorial Hospital June 1, aged 85, of arteriosclerosis and heart disease.

Wees, Marshall Paul ⊕ La Jolla, Calif.; University of Michigan Medical School, Ann Arbor, 1943; interned at St. Mary's Hospital in Saginaw, Mich.; served during World War II; died June 15, aged 49.

Westly, Gabriel S. ⊕ Manly, Iowa; State University of Iowa College of Medicine, Iowa City, 1916; served during World War II; on the staff of St. Joseph's Mercy Hospital in Mason City; died June 3, aged 68, of carcinoma of the rectum.

FOREIGN LETTERS

AUSTRIA

Ganglion Blocking Agents.—At the meeting of the Austrian Society for Gynecology and Obstetrics in May in Velden am Wörthersee, Dr. R. Riegler of Graz said that there are three ways in which the neurosympathetic ganglions can be interrupted by blocking agents: (1) suppression of the secretion of acetylcholine, which is the important substance in transmission; (2) suppression of the liberated acetylcholine; and (3) permanent depolarization of the cellular membrane in the peripheral neuron. Knowledge as to whether a ganglion blocking agent acts by suppression of acetylcholine or paralyzes the muscles by depolarization is important in connection with the weakening of intensification of this effect by substances inhibiting cholinesterase. Paralysis can be abolished by agents that block the cholinesterase only in patients in whom the blockage is caused by suppression, whereas in cases of depolarization the opposite effect results.

Hemorrhagic Diathesis.—At the same meeting Dr. E. Deutsch of Vienna stated that the differentiation between thrombocytic and vascular hemorrhagic diathesis is possible only on the basis of the coagulation mechanism that can be determined in the laboratory. In acute hemorrhages transfusion with whole blood is required. Plasma expanders may be used only if an exact diagnosis has been established. In the toxemias of pregnancy afibrinogenemia and the clotting caused thereby can be caused by a reactive fibrinolysis. Shock may lead to the liberation of heparin-like substances. Therapy consists of infusions of 8 to 10 gm. of purified fibrinogen and the injection of 5 to 10 cc. of 1% solution of protamine sulfate.

Eclampsia.—At the same meeting Dr. H. Wimhöfer of Heidelberg said that the frequency of eclampsia in the region of Heidelberg was 0.2% between 1940 and 1953 and 78.2% of the patients were primiparas. During World War II eclampsia decreased, but this decrease was evident before the food supply became greatly curtailed. Between 1944 and 1948 eclampsia increased again, although foods were still in limited supply. This seems to indicate that in addition to a nutritional factor a psychic factor plays a part in the production of eclampsia. The speaker further analyzed and classified late gestoses into essential and secondary gestoses caused by and superimposed on other disorders. In only 35 of 80 women with late gestoses was the subsequent pregnancy a normal one; 28 had preeclampsia and 14, eclampsia. Of the women with eclampsia, 6% had a normal blood pressure. This does not contradict the theory of arteriolar spasm. The case fatality rate increased with rising oliguria, and an increase in the attack rate was likewise accompanied by an increase in mortality, but the increase in time between the first attack and the delivery did not influence the case fatality rate. The speaker stressed the value of a diet that is rich in vitamins and in high-grade proteins but has a low sodium chloride content. The presence of hypoproteinemia indicates a serious condition, and when this occurs it is advisable to give milk proteins, preserved plasma, amino acid mixtures, and methionine. Hypertonic dextrose solutions and Periston (a plasma expander) may be given in quantities of from 200 to 400 cc., particularly to patients in whom the eclampsia has caused pulmonary edema. The maternal mortality rate was 16.9% in 189 eclamptic women in whom cesarean section was performed and 6.3% in 411 women who were hypotensive and received conservative treatment. The fetal mortality rate was 7% with active treatment and 10% with conservative treatment.

Dr. E. Ostergaard of Copenhagen said that in Denmark most babies are delivered in the home. In Copenhagen, however, about 80% of all deliveries take place in hospitals. In 1945 a law was passed entitling all pregnant women to three examinations by a physician and to six examinations by a midwife at the expense of the state. A Wassermann reaction and examinations to ascertain the Rh factors are also free. Eclampsia has been treated for many years according to the conservative method of Stroganoff. In 1936 the maternal mortality rate was 0.53% and in 1953 only 0.1%. The frequency of eclampsia was 2.3% between 1935 and 1940 and 1.2% between 1948 and 1953, and the speaker believes that this improvement is the result of the welfare law. The physician is required to hospitalize any pregnant woman whose systolic pressure rises over 150 mm.

Leinzinger and Ribitsch of Graz said that, of 56,505 women delivered between 1925 and 1954, 335 or 5.9% had eclampsia. Of these, 74.8% were primiparas. Of the eclamptic attacks, 2% were recurrences, and 8% of the women with eclampsia delivered twins. The war had no noticeable influence on the incidence of eclampsia. It proved impossible to establish a connection between eclampsia and such factors as meteorologic conditions, sun spots, or terrestrial magnetism. The maternal mortality rate was 13.7%, and the infant mortality rate was 27.9%. Delivery was surgical in 47.2%.

Prolonged Pregnancy.—At the same meeting Dr. S. Kolonja of Klagenfurt said that prolongation of pregnancy was observed in 775 of his series of 8,000 deliveries. The pregnancy that continues beyond the computed term involves no particular danger for the infant. Waiting for spontaneous delivery is advisable. When no measures were taken to induce delivery, no fetal death that could be ascribed to the prolongation of pregnancy occurred, but fetal mortality and the need for operative intervention was multiplied several times when delivery was induced by means of drugs. It is necessary to differentiate between true prolongation of pregnancy and a belated delivery due to endogenous factors.

Amenorrhea.—At the same meeting Dr. E. Leinzinger of Graz said treatment was justified for amenorrhea of short duration, citing psychic and psychosomatic factors and pointing out that there is a danger that the brief amenorrhea may become prolonged. In 157 patients with amenorrhea of short duration a 1:10 mixture of estrogen and progesterone was used; 53 of the women treated were pregnant and in 4 of these abortion resulted, which, however, could not be ascribed to the treatment. Psychic factors may be responsible for amenorrhea. Treatment is especially necessary when amenorrhea of short duration shows a tendency to recur. The treatment described may be effective in as high as 96.4% of the patients.

Cortisone in the Treatment of Sterility.—At the same meeting Dr. A. Netter of Paris stated that increased 17-ketosteroid values were found in the urine of women with anovulatory cycles caused by corpus luteum insufficiency. Three of these women, in whom the anatomic conditions appeared normal, were given cortisone. One woman had a bilateral hydrosalpinx, for which she had received conservative treatment between 1951 and 1954. She conceived following treatment with cortisone and was able to carry the pregnancy to term and give birth to a normal infant. In two other women spontaneous ovulation was induced by treatment with cortisone. The mode of action of this treatment has not been completely explained.

Adnexal Tuberculosis.—At the same meeting Dr. H. Knaus of Vienna pointed out that adnexitis in children between 10 and 15 years of age is usually tuberculous. Of 75 patients in whom tuberculous salpingitis was histologically verified, 56 had peritoneal tuberculosis. This indicates the close connection between peritoneal and genital tuberculosis. A peritoneal tuberculosis is possible only if the tubal ostium is patent. The primary process is always in the tube. In 35 of 70 patients curettage was performed one year after the operation, and in three of these the endometrial material still showed tuberculosis. These patients were given three weekly instillations of 150 mg. of isoniazid for a period extending over two menstrual cycles. In all three of

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The items in these letters are contributed by regular correspondents in the various foreign countries.

these patients the endometrial tuberculosis was cured. A tuberculous fistula likewise was cured after scraping and instillations of isoniazid. For genital tuberculosis the author recommends removal of the uterine tubes.

Urinary Incontinence.—At the same meeting Froewis and Palmrich of Vienna stated that for the diagnosis of closure incontinence it is usually sufficient to fill the bladder and make an examination while the patient is standing, while coughing, and while pressing. In this way pseudoincontinence can be excluded. This condition can be recognized also in the cystogram that indicates the form of micturition. The cystogram also permits differentiation between the vertical and rotary descent of the bladder. In patients with vertical descent, a lifting of the region of the sphincter will counteract incontinence. In rotary descent, however, or when descent is absent, only an operation that will affect compression of the urethra, or conservative measures that increase the tonus of the closure apparatus, such as hormonal therapy and gymnastics, will be effective. Dondren, which was used in 100 patients, produced cure in 50%, and in 33% it produced marked improvement.

ENGLAND

Patients, Politics, or Both?—Dr. R. Hale-White, president of the metropolitan counties branch of the British Medical Association expressed the view (*British Medical Journal*, supp., p. 225, May 14, 1955) that it was a physician's duty to take a personal part in medical politics. If he is to serve the best interests of his patients, it is as important that a physician devote a part of his time to medical politics as it is that he keep abreast of advances in scientific medicine. As an example of the muddled state of the National Health Service, Dr. Hale-White referred to the fact that, although it is claimed that many physicians are overworked, it is difficult for a young man to enter the service and even more difficult for an aging physician to ease off. It is exceedingly hard for a general practitioner to do what he would wish for his patients and in most cases practically impossible for him to follow them through an illness in a hospital. Dr. Hale-White believes that the working of the National Health Service would have been much worse had it not been for the British Medical Association's council meetings and representative meetings in the last 10 years; regulations and directions relating to what a physician might or might not do would have descended on the profession like confetti. The general practitioner might easily have been told by a government department by what signs and symptoms he could reach a certain diagnosis and what action to take when the diagnosis was reached.

The common supposition that British medicine and the National Health Service are synonymous is false. So far, the country has been spared a state monopoly in medicine, which was the undoubted aim of those who introduced the National Health Service. The fact that private practice still exists is a blessing not because private practitioners are necessarily better than their colleagues in the service but because, as long as there are two systems in healthy competition, complete disaster cannot overwhelm British medicine, and the public still has free choice in medical care. The most helpful contribution toward keeping private practice alive has been made by two or three insurance companies, one of which in the last four years has increased its membership from 60,000 to 200,000. There must now be more than 500,000 people entitled to a large proportion of the cost of their hospital and specialist treatment through these companies. In Dr. Hale-White's opinion the standard of medical practice in the country is going down and will continue to go down unless far-reaching changes are made. Those who are worried about the future of medicine in this country should not hesitate to say so. Censure of the National Health Service would be much greater were it not for indolence and cowardice. Tinkering with the service is not sufficient. If a large body in the profession really believes that the public is not getting the best service the country can afford, the first thing to do is to say so, and the next is to devise a better system in which a full-time salaried service as an alternative should not even be considered.

Inadequacies in Hospital Administration.—In the report of the Hospital Discussion Group, published in the June issue of the *Hospital*, the view is expressed that, should the quality of administration be low and an atmosphere of ministry rules and regulations, auditors' queries, and general subservience to the vast impersonal machine of central control prevail, a slow decline in the quality of hospital service will be inevitable. The criticism is made that the caliber of senior hospital administrators is sometimes unequal to the responsibilities of their position. Young men of the potential caliber to bear these heavy responsibilities are not easily found within the existing service, and, if recruits are to be attracted from without, they must be offered not only an ultimate salary commensurate with their responsibilities but also a course of training that will equip them for their duties in the shortest possible time.

Some hospital authorities have established trainee posts with the object of attracting into the administrative service university graduates and others considered suitable for senior posts, but there is a certain amount of opposition from within the service itself to such selective entry. Although promotion within the service should be encouraged, it should not be assumed that there is any intrinsic merit in this laborious ascent nor that the successful negotiation of the lower rungs gives one a head for heights. Training schemes that expect to attract new entrants into the lowest clerical grade are unrealistic. A training scheme has been outlined, extending over three years, and it is recommended that the age of entry should be at least 23. After an introductory three months at a hospital staff college, the trainees would spend 18 months in designated trainee posts attached to hospital management committees, boards of governors, or regional hospital boards. The next three months would be spent under the direction of the staff college for a course of instruction in all aspects of administration. During the final year the trainees would be attached to the central administration of a hospital management committee or board of governors as personal assistants to the chief administrative officers.

Number of Hospital Beds.—Do we need more beds to deal with our waiting lists? Can we afford to maintain these additional beds? These are two of the problems dealt with in the current issue of the *West London Medical Journal* (60:95, 1955). There is too rigid a system of allocation of beds to specialists. Consultants should be prepared to transfer beds to other colleagues as circumstances demand. The seasonal variation in the demand for accommodation should be borne in mind. Further, there should be sufficient flexibility to allow wards designated for men to be used for women, and vice versa. Local health authority services are not being used sufficiently. An efficiently used health visitor service could reduce the demand for hospital beds by caring for patients in their homes under the direction of a physician. The provision of large and better organized outpatient departments, with adequate diagnostic facilities geared to local health and general practitioner services, would also reduce the demand on hospital bed space. In plans for hospital extension, provision should be made for hostels, where patients could stay while undergoing radiotherapy and physical therapy. The introduction of "day hospitals" for the care of patients with senile dementia and the victims of mild mental disorders is also recommended. Some of the small uneconomical cottage hospitals might better serve the community as health centers.

Megaloblastic Anemia Due to Phenytoin.—Two further cases of megaloblastic anemia apparently due to phenytoin have been reported by N. Berlyne and his co-workers (*Brit. M. J.* 1:1247, 1955). Both were in epileptic subjects, aged 28 and 26, respectively, and both subjects had been taking phenobarbital and phenytoin. The first had been taking these two drugs for at least 18 months, and, at the time when the anemia was detected, the dosage was 100 mg. of phenytoin and 50 mg. of phenobarbital three times a day. The subject's erythrocyte count fell to 1,800,00 per cubic millimeter, with 25% hemoglobin. The second subject had been taking phenobarbital and phenytoin for four years, and the current dosage was 100 mg. of phenytoin and 32 mg. of phenobarbital three times a day. His erythrocyte count was 1,600,000 per cubic millimeter, with 28% hemoglobin. Both had free hydrochloric acid in the gastric juice. In both, the anemia failed to respond to cyanocobalamin but responded promptly and completely to folic acid, even though the administration of both phenytoin and phenobarbital was maintained all the time. In neither patient was there any evidence of nutritional deficiency, steatorrhea, or liver disease, and neither had had any gastrointestinal operations. Phenytoin is believed to act as a folic acid antagonist, but this complication of phenytoin therapy is relatively rare.

Hypnotism in Dermatology.—Dr. Hugh Gordon investigated the effect of hypnotism in 144 dermatological patients (*Brit. M. J.* 1:1214 [May 14] 1955). The suggestion was given patients during hypnosis that the skin condition would resolve and return to normal and that irritation, if present, would disappear. In most of the conditions treated, pruritus was a troublesome feature, and the antipruritic effect of hypnosis was often marked. Later in the investigation, psychotherapy was added to hypnosis. Dr. Gordon found that the psychic factor was important in degrees varying from 100% down to 50% in a wide range of common skin disorders. One boy of 12, who had had eczema and asthma from the age of 2, was completely cured of both in about six sessions. He was still clear two and one-half years later. The series included many patients with atopic eczema, and some of them had been extremely resistant to treatment. In another patient with dermatitis herpetiformis of 10 years' duration, the condition had been controlled by arsenic, but this had to be withdrawn because of severe and obscure retinal lesions. These improved when the arsenic therapy was stopped, but the dermatitis relapsed. Both skin and eye lesions cleared up rapidly under hypnosis and psychotherapy and had remained so at the time of a two year follow-up.

Myxomatosis and Man.—There is a certain amount of public anxiety concerning the possibility of transmitting myxomatosis to man. In a recent issue of the *Practitioner* (174:709, 1955), Dr. E. J. Moynahan, who was called in to see the first alleged human case of myxomatosis in this country last year, states categorically that man cannot be infected. There are several diseases that bear a superficial resemblance to myxomatosis and that the patient or his relatives may confuse with the animal disease. These include bullous erythema multiforme, ectodermosis erosiva pluriorificialis (Stevens-Johnson syndrome), atypical cases of chickenpox and smallpox, bullous dermatitis herpetiformis, pemphigus vulgaris, angioneurotic edema, and certain drug rashes. Persons handling sick rabbits may develop localized or systemic infections, through cuts or abrasions, due to the common pyogenic organisms. These infections may give rise to anxiety in the patient and his relatives unless they are recognized for what they really are.

Mitral Valvotomy at Full Term.—A 35-year-old woman with pure mitral stenosis had a valvotomy performed 10 hours before the birth of her ninth child (*Brit. M. J.* 1:1191, 1955). She was admitted to the hospital in the early stages of labor. During her previous pregnancies she could recall no notable symptoms, nor did she know of any abnormality of the heart. She gave a history of persistent nonproductive cough of six weeks' duration and was found to have dyspnea, orthopnea, cyanosis, and a hemoglobin of 55%. Clinically and radiologically she had the classical findings of mitral stenosis, and, in view of the rapid deterioration in her condition after admission, it was decided to perform an emergency valvotomy. This revealed a tight stenosis, but both commissures separated without difficulty. The patient was returned to the ward in a satisfactory condition, and 10 hours later a live infant, weighing 8 lb. (3,628.7 gm.) was born without difficulty or distress to the mother.

Experimental Health Center.—The second health center to be built in Scotland has been opened at Stranraer. The aim of the center, which is experimental, is to bring the different health services closer together and to enable them to cooperate to the advantage of the patient in the common aim of preventing as well as curing ill-health. The building, which covers 7,000 square feet, is built in an L-shape and incorporates an extension to the adjoining Garrick Hospital. One wing provides five consulting suites for the five family physicians who practice in Stranraer and who between them have a total of 13,200 National Health Service patients. In the other wing the local authority has three rooms and a dental room for its own use and will share another four with the board responsible for running the Garrick Hospital. In addition, the hospital has for its own use a changing room, a plaster room, and a suite for the x-ray unit.

How State and Voluntary Services Saved a Family.—In spite of the welfare state, people are still dependent on ancillary agencies for the successful solution of their troubles. A father, mother, and four young children, all apparently healthy, emigrated to Australia. On arrival it was found that the father and one of the children had pulmonary tuberculosis, and the family had no option but to return. They arrived in Bournemouth having exhausted their savings, with nowhere to live, no income, no resources, and no prospects. The father was sent for long-term treatment, and within a fortnight the family, now on National Assistance, was brought before the special hardship committee and a house was allocated to them. The voluntary tuberculosis care committee provided all that was necessary to set up home. Of the money spent by the care committee, some was recovered from service funds (the couple having served during the war) and the National Assistance Board. The women's voluntary services also contributed furniture, and the Soldiers, Sailors, and Air Force Association helped with clothing. Volunteers also helped in establishing the home. Two children had since been admitted to a sanatorium, and, throughout, a constant checkup was made to ensure that the most urgent needs were met. Response to help from all sides was so remarkable that the family was overwhelmed with gratitude. Most important of all, the father was able to go through his hospitalization with his mind freed from worry concerning the security of his home and family.

Critics of the National Health Service.—The physicians of any country in which initiation of a health service in the pattern of the British National Health Service is being considered, would do well to read the two opening articles in the *British Medical Journal* of April 30. These articles are by a middle-aged consultant and a young general practitioner respectively. An editorial in the same issue states that the worst thing that could happen to medicine in England would be an apathetic acquiescence of the working of the National Health Service. The profession is entangled in a mass of forms, committee reports, and an endless stream of administrative regulations. Neither the consultant nor the general practitioner complain of poor remuneration or overwork. The established young general practitioner in partnership practice today has a much easier time than his predecessors. He has a secure, pensionable job, but the fear of litigation has stifled the initiative that has done so much to improve medical and surgical practice. Apathy and a deterioration of standards are beginning to be evident, and there is a widening gap between the hospital staff and the general practitioner.

Upgrading Mental Nursing.—Hospital authorities in England and Wales have been asked by the Minister of Health to promote wherever possible the interchange of student nurses between general and mental hospitals as a means of improving the quality of the mental nurses's training, introducing a valuable element into the training of general nurses, and breaking down the isolation from which many mental hospitals still suffer. The General Nursing Council has agreed that for student mental nurses a six months' assignment to a general hospital would be satisfactory. The council has also agreed to consider proposals for the assignment of student general nurses to mental hospitals for part of their training.

Ophthalmic Hospital of St. John.—Sir Stewart Duke-Elder has been instrumental in finding a site for the rebuilding of the Ophthalmic Hospital of St. John in Jerusalem. A new site has been purchased outside the old city, and it is hoped that the building will be finished by the end of 1956. The present hospital has 45 beds, but the new one will have 70 beds and, in addition, a special wing to house the research institute. The latter will have a separate staff but will be under the control of the Order of St. John. The staff of the institute, when complete, will consist of a medical director, three British scientists, three Arab scientists, and a number of technicians. Research on trachoma will be an important part of the work of the institute. The initial cost of the hospital and institute is expected to be about $700,000.

Dellwood Fire.—The *British Medical Journal* of April 16 publishes the account of the effects of the Dellwood Fire by Drs. M. E. Cox and her co-workers. In the early morning of Easter Sunday (April 18, 1954) a fire in the nursery of the Dellwood Maternity Home resulted in the death of 13 newborn babies. The fire was caused by the flue of a hot-water boiler, which in September, 1953, had been moved, so that it ran beneath the floor of the nursery. It was subsequently established that the installation of the flue complied with the local building regulations, but the regional board in their inquiry agreed that the regulations needed revision. It seems likely that the fire began slowly, with much smoldering of wood over a large area of floor. This filled the room with thick smoke, until, finally, part of the floor ignited and the flames spread to one of the cots. It is thought that the room may have been filled with smoke for between 20 and 30 minutes. There were 15 babies in the nursery, the doors of which were closed. Two nurses were on duty, and the nursery was visited at intervals during the night, the last visit before the fire being at about 3:15 a. m. The fire was discovered by one of the nurses at 4 a. m., and she immediately began to remove the babies from the room while help was being called. While removing the first babies she received severe burns of face and arms and was in great distress from the inhalation of smoke. She continued to bring them out one by one and collapsed when the last one had been carried out. She was admitted to the hospital and was later decorated by the Queen.

Signs and Symptoms.—One of the authors first saw the babies at 4:30 a. m. The baby whose cot had caught fire was dead due to extensive burns. Three others were transferred to the Battle Hospital at once and placed in oxygen boxes. All three were limp and pale and in great respiratory distress. There was much clear viscid discharge from the nose and eyes and complete nasal obstruction. The remaining 11 babies were in good general condition, but all were coughing and had some discharge from the nose and eyes. Their color was generally good apart from slight occasional cyanosis produced by coughing attacks and interference with breathing by nasal obstruction. During the day there was some deterioration. Respiratory rates rose, and the coughing increased. Scattered rales became audible in every child in the afternoon and evening. All were kept in oxygen boxes.

Treatment.—Early on Monday morning all the surviving babies were transferred in oxygen boxes to the Royal Berkshire Hospital. An alarming increase in respiratory obstruction developed in all the infants, and on Monday evening it seemed unlikely that any of them would survive. Two of the babies began to improve after the third day and finally made a good recovery. There is no reason to suppose that these two suffered less exposure to the smoke than any of the others. In addition to oxygen therapy, mucous secretions were aspirated at intervals as needed, and 5% sulfacetamide was applied to the nose and eyes. Penicillin was given, starting on the morning of the first day. Humidification was maintained by electric steam kettles. At midday on Monday treatment with streptomycin and cortisone was started. Feedings, at first with glucose-saline solution and later with a milk mixture, were given by esophageal tube during the first 48 hours. Aspiration of the trachea was attempted in three babies without apparent benefit, and hardly any mucus was obtained by this method. In those babies who survived the first 48 hours, percussion drainage was attempted, in addition to postural drainage and frequent changing of position. This seemed to produce some good results: mucus was coughed up and aeration seemed to have improved. In one of those who recovered, a large bronchial cast was aspirated from the nose on the sixth day, after one of these periods of percussion drainage.

Comment.—The most important question that arises is whether anything further could have been done to help these babies. Atropine might have been given in sufficient doses to diminish secretion. It might, however, also have made secretions more viscid and less likely to separate. Humidification by mist, perhaps with the addition of a detergent, might have been used, but this could have led to a fatal increase in the already great amount of fluid in the lungs. Cortisone might have been given earlier and in larger doses, but, in addition to diminishing exudative responses, cortisone promotes fluid retention and possibly diminishes resistance to infection. More vigorous and intensive aspiration of the lower respiratory tract might have been attempted, including aspiration through tracheotomies, but such procedures in newborn infants have their own risks and probably a high mortality rate. They might, however, have been effective in the babies who survived to the third day, when some of the casts were beginning to separate. The custom of putting all the babies into a nursery for the night so that the mothers can sleep undisturbed is widespread and is the rule in small maternity homes. Apart from the possibility of a disaster such as this, the system is bad. The proper place for the normal newborn baby is in a cot close to the mother's bed.

FRANCE

Cardiopericardiopexy.—In the *Archives of Cardiac and Vascular Diseases* of February, 1955, A. N. Gorelik presents the results of 150 cases treated by cardiopericardiopexy. This operation transforms an ischemic into a hyperemic myocardium through the introduction of talcum powder into the pericardial sac, thus causing an inflammation of the pericardium, myocardium, and adjoining tissues. As a result a granulomatous pericarditis is created leading to the development of anastomotic intercoronary vessels. Gorelik modified the former procedure of Thompson by resecting the left costal cartilage and its perichondrium in order to allow the development of new vessels between the pectoralis major and the pericardium. The author has also extended the indication of this method, which was originally used to relieve angina pectoris, to include certain complications of acute rheumatic fever. He reports a series of 50 patients with far-advanced rheumatic cardiopathy and 100 with angina pectoris. In the first category the operative mortality was 12%, but in those who survived the improvement has been remarkable. In the group with angina pectoris the operative mortality was 10%, but in those who survived the results were excellent, and they have been able to resume their normal physical activity without pain or dyspnea.

Chlorpromazine in Gastric Crisis.—At a meeting of the Medical Society of Paris Hospitals in March, R. Moreau and his co-workers reported that in a patient with gastric crisis of tabes, which was not relieved by atropine nor any other drug, a slow perfusion with 50 mg. of chlorpromazine in 500 cc. of isotonic dextrose solution gave prompt and lasting relief. In another patient whose gastric crisis was due to plumbism, an intravenous perfusion with chlorpromazine alone gave complete relief within two hours. The mechanism of this action remains obscure.

Cells Infected with Poliomyelitis.—At the same meeting, Professor Borski and his co-workers of the Pasteur Institute demonstrated by means of microcinematography the appearance of a homogenous eosinophilic mass in the center of fibroblasts taken from a human tonsil 15 to 20 minutes after poliomyelitic viral infection and grown in a culture medium. This mass throws the nucleus and cytoplasm toward the periphery. In some cells contractions were observed when the central mass was half developed. These contractions led to deformity of the nucleus by the rigid inclusion body. At first this deformity was reversible. The nucleus regained its normal form after each early contraction but progressively became flattened and thrown aside during the successive contractions. At the moment of the cellular death, it was completely eccentric and flat.

Poliomyelitis.—In May, 1955, at the meeting of the Medical Society of Paris, Vigot and Poilpre of Caen reported on the use of cortisone in patients with paralytic poliomyelitis. Of 13 patients given 50 to 250 mg. of cortisone per day intramuscularly, only one died, and in 7 the paralysis did not progress after 24 hours of this treatment. Five other patients with severe respiratory paralysis all survived.

NORWAY

When to Operate for Gastric Ulcer.—In *Nordisk Medicin* for May 25 Dr. O. Römcke presented statistics far from flattering to the medical treatment his patients had received; only 22% of those with gastric ulcer, 12% of those with pyloric ulcer, and 11% of those with duodenal ulcer were symptom-free eight years after the completion of medical treatment. Hence, his present policy is to recommend operative treatment if the patient relapses after a course of medical treatment in hospital and cannot remain symptom-free on light dietetic restrictions. His advocacy of operation for gastric ulcer, as distinct from duodenal ulcer, is influenced by the greater likelihood of malignant disease in those with gastric ulcer. The swing of the pendulum in favor of surgical treatment is indicated by figures covering the period 1935 to 1949. At the beginning of this period only 19% of the 237 ulcers were operated on, whereas at the end of this period 35% of the 187 ulcers were operated on. Römcke hesitates to recommend an operation for patients over 60, but with the operative mortality falling steadily he has shifted his age limit upwards. Patients in whom neurotic tendencies play an important part are disappointing subjects for operative treatment, and Römcke is also diffident about recommending such treatment for very young patients. In the same issue Dr. C. Bruusgaard said that he advises his patients to eat, drink, and be merry, because ulcers heal when you are merry, and no new ulcer develops if you are always merry.

Epidemic Hepatitis.—Dr. R. A. Jensen, in *Tidsskrift for den norske lægeforening* for June 15, reports two outbreaks of epidemic hepatitis. A woman, aged 29, was admitted to the hospital in February, 1953. Four days after admission she became jaundiced, and because a tentative diagnosis of cholelithiasis was made no steps were taken to isolate her. It was only after she had been jaundiced for 22 days that infectious hepatitis was diagnosed and she was transferred to another ward. After this transfer and during the following eight weeks, infectious hepatitis developed in 11 members of the nursing staff. All 11 nurses had been in contact with the patient, and it is probable that in 9 of these the infection had passed from one nurse to another. This hospital outbreak led Jensen to study the community of about 1,200 persons to which the original patient belonged. In this nsely populated community centering around a school on the outskirts of Oslo, it was found that there had been an outbreak consisting of 24 cases of infectious hepatitis. Epidemiological evidence suggested that the infection had been transmitted by personal contacts. Although this was the most plausible interpretation, the water supply of the community was examined and was found to be heavily polluted, and measures were taken to assure the community a purer drinking water.

TURKEY

Chronic Myelocytic Leukemia.—In *Saglik Dergisi* (vol. 29, no. 1) Erkmen and Yazan reported on Dichloren (a nitrogen mustard proprietary preparation) therapy in two patients with chronic myelocytic leukemia. A woman, aged 45, had a hard and painful abdominal swelling on the left side and was losing weight. On admission she was weak and anemic; her enlarged, hard, smooth, painless spleen had descended 6 cm. below the umbilicus; and her hard, smooth, painless liver was palpable 5 cm. below the costal margin. Her erythrocyte count was 3,400,000 per cubic millimeter; her hemoglobin level 40%; and her leukocyte count 184,500 per cubic millimeter, with 43% metamyelocytes and transitional cells, 26% neutrophils, 12% myelocytes, 10% eosinophils, 7% lymphocytes, 1% premyelocytes, and 1% monocytes. She was given an intravenous injection of 0.1 mg. per kilogram of body weight of Dichloren every other day for eight doses. Forty-eight hours after the first injection a rapid decrease in leukocytes was observed. Within 10 days the count dropped to 55,000 per cubic millimeter and after 21 days, to 9,000 per cubic millimeter. Recession of the spleen was observed on the 4th day, and after 25 days it was no longer palpable. After 20 days the differential leukocyte count was 21% metamyelocytes and transitional cells, 48% neutrophils, 19% lymphocytes, 8% myelocytes, and 4% eosinophils. The patient's general condition was markedly improved, and she had gained 3 kg. (6.6 lb.) in 35 days. On discharge 10 days later, her erythrocyte count had risen to 4 million per cubic millimeter and her hemoglobin level to 60%. A relapse occurred eight months after her discharge from the hospital, and she was given a maintenance dose of 0.1 to 0.3 mg. of Dichloren.

The second patient was a woman, aged 48. On admission she was weak and anemic. Her spleen had descended to the pubis, and her liver was palpable 6 cm. below the costal margin. Both organs were hard, smooth, and painless. Her erythrocyte count was 2,000,000 per cubic millimeter; her hemoglobin level 35%; and her leukocyte count 164,000 per cubic millimeter, with 56% metamyelocytes and transitional cells, 20% myelocytes, 16% neutrophils, 4% premyelocytes, 2% eosinophils, and 2% lymphocytes. Sternal puncture revealed 10% neutrophils, 10% transitional neutrophils, 1% transitional eosinophils, 43% metamyelocytic neutrophils, 4% metamyelocytic eosinophils, 19% myelocytes, 9% premyelocytes, and 4% myeloblasts. The patient received an intravenous injection of 5 mg. of Dichloren every other day for eight doses. Seventy-two hours after the first injection, a marked decrease in leukocytes was observed, and on the 17th day the leukocyte count was 30,000 per cubic millimeter, the erythrocyte count was 3,000,000 per cubic millimeter, and the hemoglobin was 50%. Recession and softening of the spleen was observed after the second injection, and after 17 days it had receded to the umbilicus, the liver had receded 2 cm., and its edges had somewhat softened. The patient's general condition was markedly improved, and she had gained weight. Further improvement was expected, but the patient left the hospital against advice on the 20th day.

Corneal Epithelization of the Anterior Chamber.—In *Eye Klinik* (vol. 9, no. 2) Gördüren and Tosunoglu reported the development of corneal epithelium of the anterior chamber of the eye after a cataract operation. It was the only case observed among the 1,112 patients who had an operation for cataract during a five-year period. The patient was a man, aged 52, who had had a preliminary iridectomy of the right eye and six months later an uncompleted extraction of a cataract. Three years later he had a complete iridectomy for capsular cataract of the left eye. On the seventh postoperative day iridocyclitis was observed. On the 16th day the patient was discharged, and his therapy was continued in the outpatient department. On the 27th day lacrimation and conjunctival congestion was observed. Behind the cornea and below the cicatrix, a fine membrane with notched edges was observed and diagnosed as corneal epithelization of the anterior chamber. The patient was readmitted. In spite of atropine, hot dressings, diathermy, and general therapy for six weeks, the condition progressed. Sensitivity of the cornea decreased, there was deep vascularization, the papilla lacrimalis was raised, and a small fistula was observed at the cicatrix. Gradually covering the corneal center, two transparent nodules on the notched edges of the membrane developed and, with the closing of the fistula and due to intraocular pressure, a secondary glaucoma developed on the 54th postoperative day. On the following day the patient was given x-ray therapy. He received five series of 1,290 r for 10 consecutive days with intervals of one week. On the 12th day the epithelium began to separate and recede upward, and the patient's severe headache subsided.

Apricot Seed Tumor.—Dr. Halil Çiray, gynecologist at Ankara General Hospital, reported a case of intestinal torsion resulting in a tumor in a multipara, aged 30. Menstruation had not occurred for several months. One month prior to admission she had a sudden, severe, abdominal pain associated with vomiting. On admission she had a temperature of 102.2 F and a pulse rate of 120 beats per minute. Her abdomen was distended and tender. Under the naval a hard, smooth, semimobile tumor was palpable. Due to abdominal tenderness, the uterus and ovaries could not be distinguished. A tentative diagnosis of torsion in an ovarian tumor was made. Laparotomy was performed, and a tumor located in the small intestine was found to contain numerous apricot seeds. After excision of the mass, the patient recovered.

CORRESPONDENCE

DESIGNATION OF "TRANQUILIZING AGENTS" IN NEUROPHARMACOLOGY

To the Editor:—An already overburdened glossary provokes misgivings in anyone who proposes to coin a new term. There are occasions, however, when new experience calls for a word to encompass it. Recent clinical use of chlorpromazine and the Rauwolfia fractions has demonstrated that these new compounds are capable of producing amelioration of a wide spectrum of symptoms in psychiatric disorders on occasion and thus "normalizing" such patients. Recently another drug having limited therapeutic qualities of this general type has been reported by me (*Science* **121**:208 [Feb. 11] 1955, and *Neurology* **5**:319 [May] 1955) and is undergoing further study. Alpha (4-piperidyl) benzhydrol hydrochloride, or Frenquel, is effective in the prevention and treatment of model psychoses produced by hallucinogenic drugs such as lysergic acid diethylamide and mescaline, as well as in some clinical cases of dissociation syndromes of schizophrenic pattern. Although the neurophysiological, neurochemical, and neuropharmacological mechanisms behind the clinical results obtained with these drugs await explanation, it would appear that the door has been opened, that further compounds of this type will be forthcoming, and that an understanding of their mode of action may be reached. A word to describe this new order of pharmacological effects appears to be justified. "Tranquilizing agents," a term used descriptively thus far, does not entirely fill the bill, nor are such words as "anti-hallucinogens" adequate. Alister Cameron, professor of classics, University of Cincinnati, has suggested that the Greeks had a word for it. The adjective *ataraktos* meant without confusion, cool, and steady, and the noun *ataraxia* meant freedom from confusion and peace of mind. Cameron tells me that the Epicureans were especially fond of this term, that they almost had a patent on it, and that it represented one of the prime goals of their philosophical system. The term was taken over in its entirety into Latin as *ataraxia*. In English it is ataraxy, and the definition given in the Revised Shorter Oxford Dictionary is "freedom from disturbance of mind or passion." It is my proposal, therefore, that drugs of this type be designated "ataraxics" and that the adjective form "ataractic" be used to describe this therapeutic property in drugs.

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RESIDENCIES FOR RADIOLOGY

To the Editor:—In collaboration with the Joint Residency Review Committee for Radiology, representing the American Board of Radiology and the Council on Medical Education and Hospitals of the American Medical Association, the American Board of Radiology has adopted the following policy.

"Effective immediately, hospitals and institutions making initial application for approval for residency training in radiology must qualify for full three-year approval. No new residencies of one or two years' duration will be approved unless they are integrated with or contributory to a fully approved program. It is strongly recommended that all hospitals and institutions presently approved for residency training in radiology develop programs offering complete training, either intramurally or through affiliation by June 30, 1957."

The Joint Residency Review Committee has been established to act in behalf of these two organizations in approving residency programs in this specialty. The present policy relating to future approval for full training only has been adopted to insure that residents receive integrated training with graded responsibility and continuity of supervision during their three years' residency. The requirement of a fully organized program in qualifying for approval is in accord with sound educational principles as adopted in several other specialty fields. The committee does not believe it to be in the best interest of the resident that he be permitted to take a year or more of isolated training in two or three unrelated programs in qualifying for board examination. Residents who have accepted appointment to programs that are presently approved for less than three years will receive full credit for their training on the basis of the residency's present status, through June 30, 1957.

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THE FAMILY PHYSICIAN

To the Editor:—In The Journal, June 18, page 535, is an article by Dr. Emil Seletz on recent trends in management of craniocerebral injuries. In it are several remarks directed against the general practitioner, who, in most cases, is the "family physician." If this is the type general practitioner Dr. Seletz has had the opportunity of meeting, it is most regrettable. It seems possible he may have created a general practitioner of such caliber to lend emphasis to his article. No doubt a certain percentage of general practitioners fit his description. I feel assured the percentage is small. As general practitioners, we forgive Seletz for his lowly opinion of us. We are doing our job to the best of our ability. I have often remarked I would not want to practice medicine without having specialists available. Most of us do seek the assistance of specialists whenever the need arises. I am sure it is usually in sufficient time and quite often with the correct diagnosis accompanying the patient. At least we recognize the need for a specialist's diagnostic ability in his particular field. Inasmuch as lay individuals in all walks of life have access to and read The Journal, it is evident that such material can bring discredit to the general practitioner. Such attacks from within our own ranks are folly. I believe that Dr. Seletz should be advised his remarks are not desirable. I also feel it should be suggested to the American Medical Association that such articles be rejected or revised to avoid further discredit to the medical profession.

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JOURNALS TO FORMOSA

To the Editor:—I have been asked by Dr. C. S. Huang, director, Taiwan Provincial Shikau Mental Hospital, 138 Hu-lin Street, Shun-san, Taipei, Taiwan (Formosa), for help in securing up-to-date material. His hospital is the only mental hospital for the 9 million people in Taiwan. He wrote me a pathetic letter concerning the "old methods," and the need to get his hospital "improved." My acquaintance with Dr. Huang developed through correspondence regarding a shock therapy machine that I was able to send through the generosity of the women of Lincoln, Neb., following a visit to Taiwan with my husband. The Taipei Women's Club asked me to try to get the machine. It was received with the greatest appreciation. Do you know who might send complimentary subscriptions of current journals?

Mrs. R. G. Simmons
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Lincoln, Neb.

GOVERNMENT SERVICES

ARMY

Higher Entrance Rates for Civilian Physicians.—The Civil Service Commission has granted authority to employ civilian physicians at dispensaries, infirmaries, outpatient clinics, and laboratories at the top step of each respective grade, according to Major Gen. Silas B. Hays, the surgeon general. The new authority, which goes into effect immediately, allows the Army to employ civilian physicians at beginning salaries from $7,465 per annum to $11,395 per annum. Although increasing numbers of civilian doctors are being employed in Army medical installations throughout the country, openings exist in practically every locality. As of June 30, according to General Hays, the Army was employing over 20% more civilian physicians than it had six months earlier. Those interested in securing employment with the Army and who have a license to practice medicine in any of the states or the District of Columbia should get in touch with the personnel officer at their nearest Army installation or Army medical facility of their choice.

VETERANS ADMINISTRATION

Mental Hygiene Clinics.—The Veterans Administration operates 62 mental hygiene clinics throughout the country, of which 39 are in regional offices, 14 are in hospitals, and 9 are in smaller VA offices. The VA also operates one traveling clinic. In addition, the VA uses the services of 46 contract clinics, most of them state or community agencies. About one-fourth of the patients come to VA clinics on their own. Another fourth are referred by other medical divisions of the VA's regional offices. About one-eighth are referred by VA contact representatives, and the remainder come from community clinics, social agencies, and the like. In addition to their role as a treatment agency, the clinics play a part in training and provide an important resource for the development of clinical skills by psychiatrists, clinical psychologists, and social workers. The clinics further furnish the framework for significant research in psychiatry and clinical psychology.

The VA claims that these mental hygiene clinics keep an average of 2,200 mentally sick veterans out of hospitals every year. A great number of these veterans are engaged in useful, productive work while receiving treatment and generally improve sufficiently to end their outpatient treatments. Only veterans with service-connected neuroses or psychoses may be treated in the VA's mental hygiene clinics. The law does not permit the treatment of non-service-connected cases on an outpatient basis.

Training Program in Rehabilitation.—The Veterans Administration has launched a residency training program in physical medicine and rehabilitation for its full-time career physicians. Prior service in the VA will not be a requirement for this training as long as the obligated service contract is signed. Formal residency training will be provided at VA hospitals approved for such training by the American Medical Association and the American Board of Physical Medicine and Rehabilitation. Five VA hospitals have been designated to put this program into effect on a pilot basis. The hospitals are in Boston; the Bronx, N. Y.; Hines, Ill.; Houston, Texas; and Los Angeles. Selection of VA physicians will be restricted to physicians in intermediate or lower grades. To be eligible, physicians also must be approved by the manager and the deans committee of the training hospitals concerned. Contracts with physicians selected for this training will require that: for one year served in training, the obligated service shall be one additional year; for two years served in training, the obligated service shall be one and one-half additional years; for three years served in training, the obligated service shall be two additional years. Application should be sent to the manager of the VA hospital in which the physician wishes to take his residency training.

Changes in Hospital Managers.—Appointment of managers for Veterans Administration hospitals at Minot, N. D., and Lebanon, Pa., have been announced. Dr. Roland W. Hipsley, manager of the Minot hospital, has been transferred in the same position to the 1,065-bed hospital at Lebanon, succeeding Dr. James R. Glotfelty whose transfer to the VA hospital at Durham was announced recently.

Personal.—Dr. Fred M. Patterson, Greensboro, N. C., has been appointed examining physician, chief grade, in the VA regional office in Columbia, S. C., and will assume his duties about Aug. 15.

PUBLIC HEALTH SERVICE

Allocation of Poliomyelitis Vaccine.—The voluntary plan for allocation of poliomyelitis vaccine, under which the states and territories will have the responsibility for its distribution, both through commercial and public agency channels, has gone into effect, the Department of Health, Education, and Welfare, announced, after the National Foundation for Infantile Paralysis announced that its immediate summertime needs had been met and that it would not require all of the last batch of poliomyelitis vaccine released for use. Under the voluntary plan each new batch of the vaccine will be allocated among the states as it becomes available. The states will then determine what proportion of their share is to go to public agencies and what amount will be distributed by the manufacturers through normal drug channels for use by private physicians.

Allocations to the states will be based on each state's proportion of children in the initial priority group, excluding children who have already been immunized under the program of the National Foundation for Infantile Paralysis. The current priority age group of five through nine was recommended by the National Advisory Committee on Poliomyelitis Vaccine in May. For the country as a whole, these children are in the age group most susceptible to poliomyelitis. The department also announced the first allocation to the states, consisting of 846,000 cc. of vaccine. This is the amount remaining from the last batch of vaccine released by the Public Health Service after the current needs of the foundation had been met. Within all the states, officials have been designated by the governors to handle the problems of equitable intrastate distribution. The foundation's announcement that its immediate summertime program will not require additional vaccine said that the manufacturers have agreed to make available some 3 million cc. of the vaccine in the fall so that the foundation can resume distribution of vaccine for immunization of children in the first and second grades in those states that have halted immunization for the summer.

Manual of Tests for Syphilis.—The Public Health Service has announced release of the 1955 edition of the Manual of Serologic Tests for Syphilis, which assembles the latest technical procedures to be observed in the performance of each of the reliable, evaluated serologic tests for syphilis now commonly employed in the U. S. Earlier editions have proved effective in developing the high degree of standardization of serologic testing procedures now evident in laboratories throughout the nation. The 106-page manual (Public Health Service Publication No. 411) is especially designed for use in laboratories. Copies may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. The price per single copy is $1.00.

Monkeys for Research and Production of Antipoliomyelitis Vaccine.—As a result of negotiations, the United States Mission t India and the United States Embassy in India have secured th agreement of the government of India to permit the continue exportation of rhesus monkeys for medical research and production of antipoliomyelitis vaccine. All needs must be certified b the U. S. government through the Public Health Service. Information concerning Public Health Service procedure and Certificate of Need forms may be secured from: National Institute of Health, Room 1012, Building T-6, Bethesda 14, Md. (Telephone number: OLiver 6-4000, Ext. 2748, Miss Parent).

COUNCIL ON INDUSTRIAL HEALTH

The following text and tables are abstracted from a lengthier presentation to be issued separately by the Council on Industrial Health. The complete report will contain comprehensive data for 39 jurisdictions, covering both annual and 10 year base periods. Pertinent data relating to medical relations in workmen's compensation together with a number of fee schedules will be incorporated. C. M. PETERSON, M.D., *Secretary.*

SOME MONETARY ASPECTS OF WORKMEN'S COMPENSATION EXPERIENCE IN THIRTY-NINE JURISDICTIONS

A substantial deficiency in pertinent literature of the past has been the lack of comprehensive information on the trend of dollar losses incurred for indemnity and medical benefits under workmen's compensation. To meet this need, at least partially, the Council on Industrial Health has undertaken this study to provide the medical profession with a source book of factual information in practical nontechnical form on: (1) incurred losses for indemnity and medical benefits, (2) distribution of the premium dollar, (3) selected statutory and administrative provisions that may affect losses incurred, and (4) official medical fee schedules and related directives. Premiums earned are also included, since this is the factor to which losses incurred are usually compared.

The selection of the 39 jurisdictions included in this study was governed solely by the availability of uniform statistical material from the most authoritative source. This source is the National Council on Compensation Insurance, which provided statistical tables by policy years for each jurisdiction on premiums earned, total number of compensable and noncompensable cases, total indemnity losses incurred, and total compensable and noncompensable medical losses incurred. Since the National Council is the official statistical agency of the insurance industry and the great majority of compensation insurance carriers report to it, the material supplied by this organization should be considered a comprehensive and accurate reflection of workmen's compensation experience in these jurisdictions. The National Council on Compensation Insurance compiled this information for the latest 10 year period wherever available. No comparable information is available for the seven jurisdictions with exclusive state insurance funds nor for the four that do not report to the National Council; nor is comparable and adequate information available from self-insurers in any jurisdiction. It is recognized that the inclusion of such information would enhance the value of this study. The Council on Industrial Health hopes to prepare supplemental studies in these areas in the future. Meanwhile, it believes that the material contained herein is competent for the purposes of this study.

Because much of the material in this study has been adapted from a number of recognized sources, these sources and a glossary have been listed in a separate section in lieu of extensive and repetitious footnotes. To avoid interspersing these in the text, all statistical tables have been placed together in a separate section, as have the official fee schedules and directives. This study is not intended to provide evaluations and comparisons of experience in individual jurisdictions. Such studies can best be made at the local level and on a regional basis; however, a few general comments can be made on the over-all picture as developed in this study.

GENERAL COMMENTS

With the exception of 1951, workmen's compensation has been a profitable business for the insurance industry from 1936 to date. In 1947, 1948, and 1949 workmen's compensation led all other casualty insurance lines in dollar profit. According to *Best's Insurance Reports* the remarkably good underwriting in these three years set the stage for rate decreases just at the time another round of inflation forced up medical and hospital costs. This combination of factors resulted in a temporary lapse into the red in 1951. The data in this study clearly indicate that medical losses incurred during base periods in all jurisdictions have increased substantially in dollar amounts, as have premiums earned, total losses, and indemnity incurred.

The question of vital interest to everyone is, of course, whether medical losses incurred have and are increasing disproportionately to premiums earned and indemnity losses incurred. The limitations of this study do not permit a general answer to this question; however, an analysis of each jurisdiction, as presented in this compilation and combined with other appropriate factors, should provide partial clues. Among the factors that should be considered in making such a value judgment are changes in statutory or administrative provisions related to medical aid and indemnity occurring during the base periods, as well as insurance coverage and rates.

The quality of medical services cannot be judged solely on the basis of dollar amounts incurred or paid for either indemnity or medical benefits for temporary or permanent disability. All too often this obvious fact is acknowledged and is then followed by an evaluation based largely, if not entirely, on these very standards. The preferred basis for evaluating the quality of medical services and the medical aid program includes the scope and volume of care, the degree of coordination of different services, and their continuity, timeliness, and balance that result in maximum rehabilitation of the disabled employee. Payments for medical benefits form by far the largest flexible expenditure in a workmen's compensation system because: (1) indemnity payments are fixed by statute and are supervised by the administrative agency, and (2) the portion of the premium to be retained by the carriers is also fixed at a point that is supposed to cover the expense of securing and conducting the business and to provide for an underwriting profit. It appears likely that any surplus obtained by the carriers must come largely from ability to keep the expense of medical benefits below the level at which it is estimated for the purpose of rate-making and through the selection of risks, accident prevention, and adjustment of schedule and experience variations.

An article by Bram Cavin,[1] associate editor, in the September, 1953, issue of the *Casualty and Surety Journal* provided the following basic breakdown of the workmen's compensation premium dollar:

	Cents
Loss and loss adjustment expenses	65.5
Inspection, exposure audit, and bureau	4.5
General administration	7.5
Production cost	17.5
Taxes, licenses, fees	2.5
Underwriting profit and contingencies	2.5

Mr. Cavin stated: "The table on page 6 shows the breakdown of the insurance dollar for the different lines of casualty insurance. While the figures may vary from year to year, over a great many years the variations average out and the proportions of the premium dollar allocated to the various function are as indicated. There are also minor variations from the table in some states, but, on the whole, the table represents the basic breakdown of the premium dollar." Although not included in Mr. Cavin's article, loss and loss adjustment expenses for a number of years have been allocated approximately in the following manner:

Loss and loss adjustment expenses		100% (65.5 cents)
Indemnity	59% (38.3 cents)	
Medical	29 (19.2 cents)	
Claim adjustment expense	12 (8.0 cents)	

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[1] Cavin, B.: How the Premium Dollar Is Split Up, Casualty & Surety J. **15**: 1-9 (Sept.) 1953.

TABLE 1.—*Workmen's Compensation Experience of Insured Employers in Thirty-Nine Jurisdictions by Base Periods** *(Premiums Earned and Losses and Indemnity Incurred †)*

					Premiums Earned		Losses Incurred				Indemnity Losses Incurred					
															Av. Case	
1‡	2	3	Jurisdiction	Base Period	Annual Av., $	Period Increase, %	Annual Av., $	Period Increase, %	Av. Ratio to P. E., %	Av. Share of P. E. $, Cents	Total Annual Av., $	Total Period Increase, %	Av. Ratio to L. I., %	Av. Share of L. I., Cents	Av., $	Increase, %
	x		Alabama	1/1/42- 1/31/52	3,937,791	57	1,984,640	106	50	50	1,257,545	82	63	31.5	200	73
			Arkansas	1/1/42- 3/31/52	5,330,481	42	2,606,240	97	49	49	1,747,491	74	67	32.8	276	69
		x	California	1/1/42-12/31/51	83,913,458	137	46,623,876	208	56	56	29,406,477	202	63	35.3	468	76
	x	x	Colorado	1/1/42- 2/29/52	3,918,798	86	2,130,883	226	54	54	1,287,379	258	60	32.4	337	114
			Connecticut	1/1/42- 7/31/52	13,635,557	164	8,190,771	140	60	60	5,303,344	150	65	39.0	420	69
			Dist. of Columbia	1/1/42- 4/30/52	3,867,552	59	1,957,301	113	51	51	1,208,273	117	62	31.7	363	117
		x	Florida	8/1/42-12/31/51	10,087,031	200	5,958,684	265	59	59	3,480,336	242	58	34.2	197	114
	x	x	Georgia	1/1/42- 3/31/52	5,783,785	113	3,237,088	211	56	56	1,994,151	208	62	34.7	223	132
			Hawaii	1/1/43- 7/31/52	1,857,913	155	747,923	120	40	40	437,801	100	59	23.6	242	21
		x	Idaho	1/1/42- 4/30/52	490,710	280	244,539	386	50	50	172,295	293	70	35.0	353	72
			Illinois	1/1/43- 6/30/52	37,479,362	105	22,423,554	126	60	60	14,876,824	124	66	39.6	392	94
			Indiana	1/1/42- 4/30/52	13,210,032	100	7,221,885	116	55	55	4,665,151	111	65	35.7	298	113
	x		Iowa	1/1/42- 7/31/52	6,284,528	191	3,248,079	239	52	52	1,807,584	287	56	29.1	247	121
	x	x	Kansas	1/1/42- 1/31/52	5,679,270	124	2,905,170	230	51	51	1,920,706	227	66	33.7	334	106
	x		Kentucky	1/1/42- 4/30/52	5,865,678	107	2,804,379	159	48	48	1,842,254	152	66	31.7	302	123
	x		Louisiana	1/1/42- 5/31/52	14,010,928	165	8,135,806	270	58	58	5,878,127	262	72	41.8	376	171
			Maine	1/1/43- 9/30/52	3,420,633	295	1,689,187	322	49	49	1,027,692	84	61	29.9	217	22
		x	Maryland	1/1/42- 6/30/52	9,236,979	78	4,949,737	201	54	54	3,450,126	207	70	37.8	313	186
x			Massachusetts	1/1/42-12/31/51	33,384,365	147	19,556,377	224	59	59	13,392,665	260	68	40.1	405	236
	x		Michigan	1/1/42- 1/31/52	29,223,996	155	13,524,480	228	46	46	8,438,160	202	62	29.5	352	93
x			Minnesota	1/1/42- 4/30/51	12,179,639	101	6,732,323	160	55	55	4,186,660	155	62	34.1	320	105
			Mississippi	1/1/49- 4/30/52	6,854,629	N. A.	3,878,954	N. A.	57	57	2,501,146	N. A.	64	36.5	316	8
			Missouri	1/1/43-10/31/52	16,198,610	123	8,850,961	127	55	55	6,273,748	116	71	39.0	297	109
	x	x	Montana	1/1/42- 3/31/52	847,881	125	432,112	161	51	51	309,049	140	72	36.7	535	44
		x	Nebraska	1/1/42- 6/30/52	3,964,049	129	2,026,761	159	51	51	1,222,320	161	60	30.6	336	62
x			New Hampshire	1/1/42- 6/30/52	2,827,482	105	1,477,954	128	52	52	936,028	111	63	32.8	224	97
			New Mexico	1/1/42- 4/30/52	2,320,958	144	1,308,036	310	56	56	893,863	378	68	38.1	454	240
x		x	New York	1/1/42-12/31/51	168,954,638	112	91,857,923	118	54	54	67,453,179	117	73	39.4	661	63
		x	North Carolina	8/1/42- 7/31/52	9,076,906	134	4,935,484	186	54	54	3,325,203	158	67	36.2	287	117
			Oklahoma	1/1/43- 5/31/52	11,493,745	103	6,091,710	217	53	53	4,496,285	218	74	39.2	536	116
x			Rhode Island	1/1/43- 7/31/52	6,052,995	93	3,724,127	81	62	62	2,552,793	70	69	42.8	411	69
		x	South Carolina	10/1/41- 9/30/51	5,321,695	123	2,843,547	77	53	53	2,103,378	60	74	39.2	256	98
	x		South Dakota	1/1/42- 5/31/52	685,746	159	315,692	148	46	46	189,626	115	60	27.6	269	81
	x		Tennessee	1/1/42- 4/30/52	7,010,803	114	3,549,656	172	50	50	2,299,984	171	65	32.5	275	123
	x		Texas	1/1/43-12/31/52	48,241,828	184	28,829,126	233	60	60	20,870,883	220	72	43.2	480	116
		x	Utah	7/1/44- 6/30/52	2,721,976	33	1,589,414	114	58	58	990,190	96	62	36.0	219	146
	x		Vermont	1/1/43- 8/31/52	1,378,303	103	774,812	133	56	56	472,976	126	61	34.2	231	98
	x		Virginia	1/1/42- 2/29/52	7,454,635	49	3,669,337	126	49	49	2,180,602	115	59	28.9	204	75
x			Wisconsin	1/1/42-12/31/51	18,983,725	94	9,905,405	134	52	52	6,500,633	140	66	34.3	264	144

* Data supplied by National Council on Compensation Insurance.

† Premiums earned: annual averages and period increases; losses and indemnity incurred: annual averages, period increases, and ratio to premiums earned and losses incurred.

‡ x in column, 1—physician may be selected by employee; 2—medical benefits limited in time and/or amount; 3—official fee schedule; blanks—physician selected by employer, unlimited medical benefits, and no official fee schedule.

The principal source available on the distribution of medical losses in workmen's compensation is the annual reports of the Bureau of Employees' Compensation for fiscal years 1941-1952. This agency administers the Federal Employees' Compensation Act in all workmen's compensation jurisdictions, including those in this study. No fee schedule is used by the bureau except in those jurisdictions where one is officially recognized in other compensation cases. The statistical table section of this study contains the annual distribution of the bureau's medical losses for the fiscal years 1941-1952. As may be seen from this table the average distribution for this period was:

Physicians and surgeons	31%
Hospitals	60
Other services (nursing, appliances, drugs, etc.)	9

It may reasonably be assumed that trends, at least, can be established by the application of appropriate percentages to medical losses incurred in other workmen's compensation cases. For example, the average medical loss incurred in a given jurisdiction for the fiscal years 1941-1952 might be $50. By applying the bureau's data to this amount, $15.50 would be allocated for physicians' and surgeons' services, $30 for hospitals, and $4.50 for other services. If the average medical share of the earned premium dollar for a similar period was 18.4 cents, approximately 6 cents would be allocated for physicians' and surgeons' services, 11 cents for hospitals, and 2 cents for other services. It is interesting to note that in 14 of the jurisdictions included in this study the amount incurred for medical losses does not equal the amount allocated for production (acquisition of business) costs. This fact is especially noteworthy in the seven jurisdictions where the law is compulsory.

While physicians' and surgeons' fees are frequently regarded as responsible for increased medical losses incurred, this is not borne out by the experience of the federal Bureau of Employees' Compensation. The percentage of medical losses for physicians' and surgeons' fees has declined from 49% in 1941 to 25% in 1952, with a low of 22% in 1945 and 1950. Hospitalization has absorbed an increasing amount, ranging from 40% in 1941 to 65% in 1952, with a high of 72% in 1945. The amount for other services has varied from 11% in 1941 to 10% in 1951, with a high of 14% in 1946. It is generally thought that minimal medical losses incurred, and indirectly indemnity, are more probable when the employer or carrier has the right of physician selection. Medical benefits limited in time and/or amount and official fee schedules are also considered "controlling factors." The data in this study and several tests applied to them seem to prove conclusively that this is a misconception (table 3). There is no apparent relation between low dollar amounts for medical losses incurred and any one or combination of the three "controlling factors." Nor do these "controlling factors" appear to affect any upward trend in medical losses incurred. Indeed, there are definite indications that the contrary may be true.

Various workmen's compensation administrative agencies provided the Council with copies of official fee schedules and related directives for the information of the medical profession. These and all other tables are presented as factual material. No endorsements or unfavorable comparisons between jurisdictions by the Council have been intended or should be implied. If this study stimulates a more thorough understanding of some monetary aspects of workmen's compensation, it will have served the purpose for which it was intended by the Council on Industrial Health.

TABLE 2.—*Workmen's Compensation Experience of Insured Employers in Thirty-Nine Jurisdictions by Base Periods** *(Medical Losses Incurred †)*

1‡	2	3	Jurisdiction	Base Period	Total Annual Av., $	Total Period Increase, %	Av. Ratio to Losses Incurred, %	Av. Share of Premiums Earned $, Cents	All Cases		Compensable Cases		Noncompensable Cases	
									Av., $	Increase, %	Av., $	Increase, %	Av., $	Increase, %
	x		Alabama	1/1/42- 1/31/52	727,095	156	37	18.5	21	69	67	166	11	33
			Arkansas	1/1/42- 3/31/52	858,749	153	33	16.2	34	72	99	136	12	67
		x	California	1/1/42-12/31/51	17,217,399	218	37	20.7	(49)§	(52)	(210)	(108)	(16)	(38)
	x	x	Colorado	1/1/42- 2/29/52	843,504	180	40	21.6	27	111	128	100	13	78
			Connecticut	1/1/42- 7/31/52	2,887,427	122	35	21.0	(41)	(55)	(171)	(83)	(16)	(38)
			District of Columbia	1/1/42- 4/30/52	749,028	107	38	19.3	34	87	149	121	14	70
		x	Florida	8/1/42-12/31/51	2,478,348	305	42	24.8	35	91	96	154	14	80
	x	x	Georgia	1/1/42- 3/31/52	1,242,937	216	38	21.3	24	94	83	140	12	78
			Hawaii	1/1/43- 7/31/52	310,122	156	41	16.4	(37)	(37)	(121)	(30)	(16)	(20)
		x	Idaho	1/1/42- 4/30/52	197,941	798	30	15.0	40	139	105	182	16	100
			Illinois	1/1/43- 6/30/52	7,546,730	132	34	20.4	(29)	(59)	(131)	(109)	(14)	(25)
			Indiana	1/1/42- 4/30/52	2,556,734	127	35	19.3	24	94	103	142	10	75
	x		Iowa	1/1/42- 7/31/52	1,440,495	189	44	22.9	(28)	(46)	(120)	(160)	(13)	(00)
	x	x	Kansas	1/1/42- 1/31/52	984,464	235	34	17.3	29	73	106	139	13	36
	x		Kentucky	1/1/42- 4/30/52	962,125	172	34	16.3	27	106	100	179	12	56
	x		Louisiana	1/1/42- 5/31/52	2,257,679	289	28	16.2	37	136	102	217	14	40
			Maine	1/1/43- 9/30/52	661,495	80	39	19.1	32	48	96	113	13	25
		x	Maryland	1/1/42- 6/30/52	1,499,611	188	30	16.2	29	121	86	198	13	80
x			Massachusetts	1/1/42-12/31/51	6,163,712	166	32	18.9	N. A.	N. A.	132	194	N. A.	N. A.
	x		Michigan	1/1/42- 1/31/51	5,086,320	273	38	16.5	27	112	128	155	12	100
x			Minnesota	1/1/42- 4/30/51	2,545,663	168	38	20.9	33	96	143‖	137‖	13	60‖
			Mississippi	1/1/49- 4/30/52	1,377,808	N. A.	36	20.5	46	18	131	21	15	14
			Missouri	1/1/43-10/31/52	2,577,214	160	29	16.0	30	100	84	158	13	78
	x	x	Montana	1/1/42- 3/31/52	123,063	223	28	14.3	37	159	134	94	17	57
		x	Nebraska	1/1/42- 6/30/52	804,441	157	40	20.4	(33)	(67)	(159)	(45)	(14)	(70)
x			New Hampshire	1/1/42- 6/30/52	541,926	160	37	19.2	32	100	91	174	12	50
			New Mexico	1/1/42- 4/30/52	414,174	261	32	17.9	38	129	141	203	15	58
x		x	New York	1/1/42-12/31/51	24,404,744	120	27	14.6	50	100	174	90	17	57
		x	North Carolina	8/1/42- 7/31/52	1,610,282	255	33	17.8	24	113	92	228	10	63
			Oklahoma	1/1/43- 5/31/52	1,595,425	214	26	13.8	38	81	129	135	15	50
x			Rhode Island	1/1/43- 7/31/52	1,171,334	109	31	19.2	(53)	(77)	(167)	(103)	(18)	(50)
		x	South Carolina	10/1/41- 9/30/51	740,169	126	26	13.8	28	76	65	162	11	88
	x		South Dakota	1/1/42- 5/31/51	126,065	206	40	18.4	30	86	109	198	14	50
	x		Tennessee	1/1/42- 4/30/52	1,249,816	174	35	17.5	23	88	90	158	11	56
	x		Texas	1/1/43-12/31/52	7,958,243	269	28	16.8	37	100	126	152	15	64
		x	Utah	7/1/44- 6/30/52	599,225	146	38	22.0	36	64	98	190	13	60
	x		Vermont	1/1/43- 8/31/52	301,836	144	39	21.8	26	100	97	139	11	75
	x		Virginia	1/1/42- 2/29/52	1,488,734	143	41	20.1	28	71	90	129	12	50
x			Wisconsin	1/1/42-12/31/51	8,404,772	124	34	17.7	30	100	94	145	12	78

* Data supplied by National Council on Compensation Insurance.

† Annual averages, period increases, and ratios to premiums earned and losses incurred.

‡ x in column, 1—physician may be selected by employee; 2—medical benefits limited in time and/or amount; 3—official fee schedule; blanks—physician selected by employer, unlimited medical benefits, and no official fee schedule.

§ Data in parentheses for: California—1/1/45-12/31/51, Connecticut—1/1/45-7/31/52, Hawaii—1/1/46-7/31/52, Illinois—1/1/46-6/30/52, Iowa—1/1/42-7/31/52, Nebraska—1/1/46-6/30/52, Rhode Island—1/1/46-7/31/52.

‖ Estimated.

TABLE 3.—*Effect of Medical Control Factors on Medical and Indemnity Losses Incurred*

	1 Physician Selected by Employee	2 Physician Selected by Employer	3 Unlimited Medical Benefits	4 Limited Medical Benefits	5 No Official Fee Schedule	6 Official Fee Schedule	7 Columns 1, 3, 5	8 Columns 2, 4, 6
	Means (Averages) for All Base Periods							
Incurred Losses	100	100	100	100	100	100	100	100
Medical %	34	36	34	36	35	34	34	35
Indemnity %	66	64	66	64	65	66	66	65
	Medians for All Base Periods							
Incurred Losses	100	100	100	100	100	100	100	100
Medical %	33	35	37	34	34	35	34	35
Indemnity %	67	65	63	66	66	65	66	65

MEDICINE AND THE LAW

BLOOD TRANSFUSION—SALE OR SERVICE

The Uniform Sales Act has been adopted *in toto* or in substance in almost every state. The statutory provisions contained therein are, in most particulars, a codification of business practices that developed under the Common Law and under custom and usage in Common Law jurisdictions. This act provides, among other things, that if a buyer makes known to a seller, either expressly or by implication, the particular purpose for which the goods sold are required and if it then appears that the buyer relies on the special skill or judgment of the seller in furnishing these goods, there will exist an implied warranty that the goods shall be reasonably fit for the purpose indicated. This warranty, plus a warranty that the goods shall be of merchantable quality, exists under the laws of the state of New York.[1] In a recent case decided by the Court of Appeals of New York,[2] the plaintiff attempted to apply this warranty concept to a blood transfusion.

In her complaint, the plaintiff alleged that while she was receiving medical care and treatment as a pay patient in the Beth David Hospital, she received a blood transfusion; that the blood used in the transfusion was sold to her by the hospital for $60; that the hospital knowing the purpose for which the blood was to be used and upon whose "skill and judgment" the plaintiff "relied," warranted by implication that the blood was "fit" for such intended purpose, was of "merchantable quality," was pure and harmless, and contained no injurious substances, agents, viruses, germs or impurities. The plaintiff further alleged, however, that the blood was not fit or of merchantable quality; it contained jaundice viruses, and she became afflicted with homologous serum jaundice. The plaintiff sued for damages resulting from the transfusion, not on grounds of negligence, but on the theory that the supplying of blood for the transfusion was a sale of blood from the hospital to her and was subject to the implied warranty previously mentioned.

Was there, asked the Court of Appeals, a vendor-vendee relationship between the hospital and the plaintiff, one of its pay patients? To answer this question, the court first found it necessary to consider the true function of a hospital and the true relationship existing between a hospital and its patients. A hospital, said the court, is devoted to the care and healing of the sick. Not only does it gather in its wards "a company of skilled physicians and trained nurses" and place their services "at the call of the afflicted" but it also offers to patients "the benefit of facilities" and equipment, developed through medical science, "that would not otherwise be available." The essence of the contractual relationship between hospital and patient is readily apparent; the patient bargains for, and the hospital agrees to make available, the human skill and physical materials of medical science to the end that the patient's health be restored. Concepts of purchase and sale cannot separately be attached to the healing materials—such as medicines, drugs, or blood—supplied by the hospital, for a price, as part of the services it offers. That the property or title to certain items of medical material may be transferred, so to speak, from the hospital to the patient during the course of medical treatment does not serve to make each such transaction a sale. "Sale" and "transfer" are not synonymous, and not every transfer of personal property constitutes a sale. When service predominates and transfer of personal property is but an incidental feature of the transaction, the transaction is not deemed a sale within the Uniform Sales Act.

The supplying of blood by the hospital was entirely subordinate to its paramount function of furnishing trained personnel and specialized facilities in an endeavor to restore the plaintiff's health. It was not blood—or iodine or bandages—for which the plaintiff bargained, but for the knowledge of the hospital staff and the availability of hospital facilities to provide whatever medical treatment was considered advisable. The conclusion is evident that the furnishing of blood was only an incidental and a secondary adjunct to the services performed by the hospital and, therefore, was not within the provisions of the Uniform Sales Act. The fact that the treatment might have come from a physician, while the blood came from the hospital, is of no operative consequence; it is the transaction regarded in its entirety that must determine its nature and character. In further support of its conclusion, the Court of Appeals noted, by way of analogy, that a contract to paint a picture is not a sale o a piece of canvas, a contract to construct a highway is not a sale of gravel, a contract by an optometrist to test and prescribe glasses is not a sale of eyeglasses, and rendering of care by a dentist is not a sale of crowns or false teeth.

Having, therefore, determined that the furnishing of blood for a transfusion is a service rather than the sale of a commodity, the Court of Appeals went on to speculate a little bi on how the contention of the plaintiff, if sustained, would affec the liability of a physician and hospital. If, said the court, th supplying of blood—or the furnishing of any other medica aid—by a hospital is said to be a sale, it would mean that th hospital, no matter how careful, no matter that the disease producing potential in the blood could not possibly be discovered, would be held responsible, virtually, as an insurer, i anything happened to the patient as a result of "bad" blood.

According to the complaint, the blood administered to th plaintiff was "contaminated" with jaundice viruses, with th result that she was afflicted with homologous serum jaundic *Informed opinion states that there is neither* a means of detecting the presence of the jaundice-producing agent in a donor' blood nor a practical method of treating the blood to be use for transfusion so that the danger may be eliminated. Whethe that is so, it is a fact that, if the transaction were to be deeme a sale, liability would attach irrespective of negligence or othe fault. The art of healing frequently calls for a balancing of risk and dangers to a patient. Consequently, if injury results from the course adopted, where no negligence or fault is present liability should not be imposed upon the institution or agenc actually to save or otherwise assist the patient.

The Court of Appeals accordingly concluded that the use o blood for a blood transfusion in a hospital did not constitut the sale of blood to the patient by the hospital and that th patient was therefore not entitled to recover damages from th hospital for injuries sustained as a result of the use of contaminated blood.

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[1] Personal Property Law, McK. Consol. Laws, chapter 41, section 96 subdivis.ons 1 and 2.

[2] *Perlmutter* v. *Beth David Hospital,* 123 N.E. (2d) 792.

Mitral Valvuloplasty.—A study is reported of various factor that affect the late results in patients with mitral stenosis operated by mitral valvuloplasty. This study is based chiefly on a follow-up of the first 500 patients. Seventy-eight per cent of the patients surviving operation showed significant and usually persistent improvement over the period of observation, which averaged 22 months. The factors which led to good results were (1) age over 40; (2) auricular fibrilation; (3) associated aortic valve disease; (4) associated mitral insufficiency of moderate degree or more; (5) a preoperative valve size of more than 1.0 sq. cm.; (6) a postoperative valve size of less than 2.5 sq. cm. (7) calcification of the mitral valve. Even in the less successful categories the over-all results were still good in a majority of the patients. Poor late results occurred in direct proportion to the number of adverse factors present. . . . The procedure appears to protect substantially against late peripheral embolization, although the incidence of operative emboli is somewhat greater in patients who have had previous emboli than in the groups as a whole. Good end results depend on intelligent and careful selection of patients and on the quality of the valvuloplasty performed by the surgeon.—L. B. Ellis, M.D., and D. E. Harken, M.D., Factors Influencing the Late Results of Mitral Valvuloplasty for Mitral Stenosis, *Annals of Internal Medicine,* July, 1955.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Cardiac Hypertrophy and Insufficiency of Unknown Etiology: A Clinical and Pathologic Study of Ten Cases. S. K. Elster, H. Horn and L. R. Tuchman. Am. J. Med. 18:900-922 (June) 1955 [New York].

The authors collected from the 1937 to 1952 postmortem files of the Mount Sinai Hospital of New York the records of all patients with enlargement of the heart. Their aim was to find cases that could not be ascribed to the usual causal factors. They found 10 patients with cardiac hypertrophy and myocardial failure in whom conventional etiological factors, such as rheumatic fever, hypertension, syphilis, arteriosclerosis, bronchopulmonary disease, and congenital abnormalities, were excluded. The clinical course of these patients was rapidly progressive and fatal, and frequently complicated by recurrent pulmonary and systemic thromboembolism. At autopsy the hearts showed striking hypertrophy. Degenerative muscular changes, focal necrosis, and patchy fibrosis were found predominantly subendocardially and endocardially, frequently associated with mural thrombosis. There were no significant abnormalities of the pericardium, coronary arterial tree, cardiac valves, or aorta. A brief review of similar cases previously described is presented, but none of the causes heretofore suggested as primarily responsible for this syndrome are believed by the authors to have been established. Myocardial anoxia, a concomitant of the marked hypertrophy and dilation, is believed to be an important factor in the intensification of the intracardiac abnormality. The authors believe that this entity should be considered in all patients with cardiac hypertrophy in whom the usual causes cannot be established.

The Relationship Between Renal Blood Flow, Glomerular Filtration Rate and Sodium Excretion, Cardiac Output and Pulmonary and Systemic Blood Pressures in Various Heart Disorders. L. Werkö, J. Ek, E. Varnauskas and others. Am. Heart J. 49: 823-837 (June) 1955 [St. Louis].

The cardiac output and blood pressures in the pulmonary and systemic circulation were determined simultaneously with the renal clearances for inulin and *p*-aminohippurate in 146 patients with various heart disorders. Of the 146 patients, 34 had congenital heart disease, 7 primary pulmonary disease, 4 constrictive pericarditis, 2 polycythemia, 15 hypertensive cardiovascular disease, 12 aortic valvular disease, and 72 mitral valvular disease. The same values were determined both at rest and during exercise in most patients. In some patients the study was repeated after surgical correction of the heart lesion. In some patients determinations were repeated several times during the intravenous infusion of isotonic dextrose solution at a rate of about 25 cc. per minute. The renal blood flow was lower than normal in all patients with cardiovascular disease, roughly proportional to the severity of the heart disease. The decreased renal blood flow was usually observed together with decreased stroke volume, but elevated renal venous pressure seemed to contribute to the decreased blood flow not at all or only a little. Studies during exercise also pointed to the minor importance of the elevated venous pressure for the renal changes. The renal blood flow increased to normal when a patient with patent ductus arteriosus underwent surgical correction and toward normal in a patient with auricular septal defect and pulmonary stenosis when the defect was closed. When patients with mitral stenosis were operated on, the renal blood flow showed variable changes, although a slight increase usually was observed when the pulmonary circulation was improved. When isotonic dextrose was infused rapidly, the renal blood flow increased to normal in patients with mitral stenosis or pulmonary fibrosis. The sodium excretion increased successively to several times the basal value. This reaction was observed likewise in patients with arterial hypertension but not in normal persons. The authors' observations indicate that patients with heart disease prone to develop congestive failure, long before any signs of failure have appeared, exhibit changes in renal circulation and altered sodium handling by the kidneys.

Ventricular Aneurysms of the Heart: Preliminary Report on Some New Clinical Signs. R. J. Vakil. Am. Heart J. 49:934-937 (June) 1955 [St. Louis].

In a recent study of 20 patients with proved ventricular aneurysm of the heart the following clinical signs, hitherto undescribed in the literature, were discovered. Of the 20 patients, 10 had an anomalous location of the cardiac impulse. A very wide or diffuse systolic thrust or pulsation, forcible and heaving in character, was observed and felt at the level of the fourth left intercostal space, halfway between the left parasternal and midclavicular lines. Thirteen patients had a myotonic cardiac impulse; four a double thrust or reduplicated impulse; six a wavy impulse or cardiac shudder; two a heaving, up-and-down movement of the left costal margin; nine a stony dulness over the precordium; and five a loud, long, musical, or "cooing" systolic-diastolic murmur. These signs, which are likely to facilitate recognition of ventricular aneurysm during life, are briefly described in the hope of stimulating further investigation.

Diabetes Insipidus: Discussion, Including Reexamination of the Site and Mode of Action of the Antidiuretic Hormone. A. G. White. J. Mt. Sinai Hosp. 22:15-23 (May-June) 1955 [New York].

Of 219 cases of diabetes insipidus 23.3% were primary and 76.7% secondary to some detectable disease. The essential symptoms of diabetes insipidus are excessive thirst, polyuria, and the excretion of urine of low specific gravity. Other signs and symptoms depend on: (1) the underlying disease, where one exists, and (2) the supervention of dehydration that occurs in the untreated patient when the intake of fluids does not keep pace with the output. It is generally agreed that the excessive thirst is secondary to the polyuria, but this does not exclude the possibility that excessive thirst may occur as a primary symptom after trauma or disease of the central nervous system. Data are cited to suggest that the antidiuretic hormone may act not only on the distal portion of the renal tubule, as postulated hitherto, but also on the proximal tubule of the nephron by altering the osmotic activity of solutes so that they carry along with them at least twice as much water in the patient with diabetes insipidus as they would during diuresis in hydropenic subjects.

Fat Embolism in Diabetic Patients Without Physical Trauma. S. P. Kent. Am. J. Path. 31:399-403 (May-June) 1955 [Ann Arbor, Mich.].

Fat embolism is usually thought of as related to trauma, especially traumatic fractures of bones, but fat embolism has been reported in patients with various diseases unrelated to trauma, particularly in diabetic patients. To determine whether the fat emboli found in diabetic patients could be distinguished from those found in traumatic cases, and whether the sustained

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The place of publication of the periodicals appears in brackets preceding each abstract.

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lipemia often associated with diabetes mellitus predisposes such patients to the development of fat emboli, the lungs of 53 diabetic patients who had not received known physical trauma within three weeks of death were examined for fat emboli. Fifty-three consecutive, nontraumatic, nondiabetic patients served as controls. Fat emboli were found in 24 of 53 diabetic patients, and the control series included 11 persons with emboli. Thus while fat emboli were found in both groups, the percentage of patients with fat emboli was much higher in the diabetic group. The fat emboli were usually few in number in those patients who had them and were probably of no clinical significance. They could not be differentiated from fat emboli found in patients with trauma. The five diabetic patients who had more abundant emboli were all in poor metabolic control. Four died in diabetic coma. The other patient was admitted in hypoglycemic shock and died a few hours later. These five probably had lipemia of some degree, as lipemia is usually more common and more severe in poorly regulated diabetic patients. The higher incidence of fat emboli in this limited series of diabetic patients does not necessarily implicate lipemic serum as the source of the fat emboli in these patients.

Regurgitation Type of Jaundice During Prolonged Therapy with Chlorpromazine. R. E. Lemire and R. A. Mitchell. A. M. A. Arch. Int. Med. 95:840-845 (June) 1955 [Chicago].

While receiving chlorpromazine therapy for various reasons, three patients showed protracted jaundice with laboratory findings compatible with obstruction of the extrahepatic biliary tract but with no systemic manifestations except pruritus. The liver was palpable in only one patient. All had hyperbilirubinemia, elevated alkaline phosphatase, and normal cephalin-flocculation determinations. Evidence of probable mild parenchymal damage was noted in the slight elevation of the thymol turbidity in one and in the serum globulin in two of the patients. Cholesterol determinations in two of the patients gave normal findings in one and hypercholesterolemia with decrease in the cholesterol esters in the other. Surgical jaundice could not be excluded by laboratory or clinical studies, and all three patients underwent operation, with no findings of obstruction in two. In the third patient the prior existence of a transitory stone in the common bile duct could not be completely excluded. Liver biopsies in two patients showed inflammatory cell infiltration within the lobule, minimal liver cell changes, and bile plugging of the bile canaliculi. There was a slight increase in the cellularity of the portal triads, with no evidence of obstruction of the larger biliary channels. The mechanism of this complication is unknown.

Posthepatitic Syndrome. L. Kallai. Gastroenterologia 83:77-99 (No. 2) 1955 (In English) [Basel, Switzerland].

Of 42 patients with hyperbilirubinemia, 31 had a history of previous manifest hepatitis, while in the remaining 11 such data were lacking. The clinical aspect of the 42 patients was characterized by a chronic or intermittent jaundice accompanied by subjective symptoms such as fatigue, exhaustion after work, pain below the right costal margin, nausea, lack of appetite, and loss of weight. The only abnormal finding was a more or less marked steatosis. The great similarity of symptoms and of the biochemical and microscopic findings in those patients with the posthepatitic syndrome and those with so-called chronic hyperbilirubinemia was striking. Since the posthepatitic syndrome cannot be differentiated from so-called chronic hyperbilirubinemia, one may assume that the latter condition is a complication or sequela of the anicteric form of infectious hepatitis.

Clinical Studies of Triethylenethiophosphoramide in the Treatment of Inoperable Cancer. H. Shay and D. C. H. Sun. Cancer 8:498-511 (May-June) 1955 [Philadelphia].

Triethylenethiophosphoramide (thio-TEPA) is a new nitrogen-mustard-like compound that can be administered intramuscularly, intravenously, or locally into tumor nodules without any immediate untoward effects. It was given to 47 patients with inoperable recurrent or metastatic cancer no longer suitable for surgery or responsive to roentgen ray and/or other therapy. The 12 patients with carcinoma of the breast had been treated initially with radical or simple mastectomy, and when recurrences or metastatic lesions developed, they usually responded temporarily to combined roentgen ray, testosterone, and/or castration therapy. After that thio-TEPA was tried. Six of these patients experienced regression of enlarged nodes and tumor nodules that continued for 2 to 12 months; four showed no definite improvement; and the remaining two did not receive enough thio-TEPA to warrant an evaluation of its action. Two of three patients with carcinoma of the ovary, and each of two patients with widespread malignant melanoma showed temporary regression on treatment with thio-TEPA. Only slight or no improvement from thio-TEPA therapy was observed in seven patients with carcinoma of the lung, two with carcinoma of the larynx, three with carcinoma of the esophagus, four with carcinoma of the stomach, two with carcinoma of the colon, three with carcinoma of the sigmoid, four with carcinoma of the rectum, one each with carcinoma of the small intestine, prostate, thyroid, and biliary tract, and one with malignant hepatoma. During administration of thio-TEPA, leukocyte counts should be made daily and a complete blood count including a platelet count weekly. Injections of thio-TEPA should be given daily if conditions permit. The size of any one dose and the intervals between the injections are guided by the hematological response. The following dosage schedule seems to be safe. One milligram of thio-TEPA is given intravenously for every 1,000 white blood cells. The maximum dose for any single daily injection should not exceed 10 mg. If the leukocyte count is 3,500 per cubic millimeter or less, no drug is given. Should the platelet count drop to 150,000 per cubic millimeter, or should there be a sudden drop in the erythrocyte count and hemoglobin level, thio-TEPA should be withheld and a bone marrow aspiration done. In patients with roentgenographic or other evidences of bony metastasis or in patients with infection, thio-TEPA should be given with caution. Bone marrow studies should be made fairly frequently, and if the marrow aspirate is hypocellular the therapy should be discontinued until another bone marrow aspirate shows a normal cellular activity.

Triethylenethiophosphoramide in the Treatment of Chronic Leukemia. C. J. D. Zarafonetis, H. Shay and D. C. H. Sun. Cancer 8:512-522 (May-June) 1955 [Philadelphia].

Nine patients with chronic granulocytic leukemia and two with chronic lymphocytic leukemia were treated for intervals up to 20 months with triethylenethiophosphoramide (thio-TEPA). Clinical and/or hematological remissions were induced in all of the subjects but were of varied duration despite continued therapy. The drug was effective whether administered orally, intravenously, or intramuscularly. For intravenous or intramuscular administration it was dissolved in sterile physiological sodium chloride solution in a concentration of 10 mg. per cubic centimeter. It was then passed through a sintered glass filter, tested for sterility, and stored in rubber-capped vials at 4 C. The usual parenteral dose was 2 to 10 mg., but as much as 25 mg. was given on occasion. For intravenous therapy the stock solution was further diluted in 10 cc. of sterile isotonic sodium chloride solution. Later this step became optional, as it was found that the 10 mg. per cubic centimeter concentration of thio-TEPA gave no local irritation either on intravenous or intramuscular injection. Tablets for oral administration were provided in 5-mg. and 10-mg. sizes. Patients received thio-TEPA by injection or in tablet form, usually daily at first and later at longer intervals, depending on the hematological findings during the course of treatment. All of the subjects had complete pretreatment blood examinations and, with one exception, pretreatment bone marrow studies. Blood studies were repeated almost daily, and bone marrow aspirations were repeated at appropriate intervals throughout treatment and during the follow-up period. Temporary bone marrow depression was observed in eight of the patients, but no other untoward side-effects were observed. Thio-TEPA is of value in the management of chronic leukemia.

Local Treatment of Tuberculous Empyema and Colliquative Tuberculosis of Soft Tissue Parts. F. Muhar. Wien. med. Wchnschr. 105:395-396 (May 14) 1955 (In German) [Vienna, Austria].

A new proprietary preparation, "Substance VI," an amide of *p*-methylbenzenesulfonic acid, was used on 23 patients with tuberculous empyema and 60 patients with colliquative tuberculosis of the skin. In the patients with empyema, the empyema cavity was irrigated with a 1% solution of Substance VI, and after removal of fluid by puncture, irrigation was repeated two to three times, and then 200 to 300 cc. of the solution were left in the empyema cavity for two or three hours. In one patient with a particularly thick-walled empyema pocket, 500 cc. of 1% solution of Substance VI were left in the cavity for 24 hours. The patient was under constant control since hemolysis had been observed in blood slides with a concentration of 0.3% or more of Substance VI. The cavity in this patient was sterilized within 24 hours, but as a rule the drug was left only for three hours in the cavity in order to prevent complications. Four of the 23 patients received local treatment with Substance VI exclusively, and the other patients were given streptomycin, amithiozone, *p*-aminosalicylic acid, and later isoniazid orally or parenterally in addition to local treatment with Substance VI for a short time at least. In the course of local therapy with Substance VI the exudate turned watery and the cavity became smaller in size until it disappeared completely. In two patients, however, the exudate remained purulent and thick, although the size of the cavity became smaller; the residual cavity disappeared as the result of instillation of streptomycin and amithiozone. Most of the patients with colliquative tuberculosis of the skin had changes in the area of the thoracic wall with residues of a pleurisy that had occurred years or even decades earlier. The main manifestations consisted of nodes in the soft tissues, which partly had softened, and frequently of systems of fistulas, which undermined the thoracic wall. The fistulas were explored with a catheter and irrigated with a 1% solution of Substance VI for about 15 minutes. Within one week the penetrating odor subsided and the amount of secretion diminished. Irrigation of the fistular system every second day for several weeks proved satisfactory. Although good results were obtained with Substance VI alone, closure of the fistulas was obtained in a surprisingly short time by combined treatment with instillation of small depots of streptomycin in the wall of the fistular canal. Management of perforated or nearly perforated nodules consisted of excision of necrotic skin and of instillation of 0.3 gm. of Substance VI powder into the resulting crater.

Is Amebiasis a Controllable Disease? O. J. Blende. Northwest Med. 54:609-618 (June) 1955 [Seattle, Wash.].

The so-called chronic cyst passer may exhibit few or no significant symptoms, or his infection may be characterized by intermittent episodes of constipation or diarrhea. In others, the diarrhea may be relatively severe and the stools contain varying amounts of blood and mucus. Acute amebic dysentery is not infrequent in the tropics but is less common in temperate zones. Any of the clinical types of this infection may be followed by amebic hepatitis, acute or chronic amebic abscess of the liver, and less frequently abscesses in other organs. Outbreaks in Chicago and one in England demonstrated that amebiasis is a controllable disease. The only true source of infection is man. The possible modes of transmission are chiefly uncooked vegetables, contaminated water supplies, and the human carrier. All of these can be controlled. Observations on endemics in mental institutions demonstrated the necessity of personal hygiene and the danger of direct infection by fecal contamination. After mass treatment of 341 patients, only two needed additional treatment to obtain negative stools. Greater zeal is necessary in the protection of water supplies, particularly in the distribution system, since in one outbreak back siphonage from toilets, drainage from a defective sewer over the unclosed water cooler, and direct cross connections between sewer lines and water supply were found.

Anaemia in Systemic Diseases. M. C. Verloop. Acta med. scandinav. 151:367-380 (No. 5) 1955 (In English) [Stockholm, Sweden].

The causes of anemia were investigated in 43 patients, including 15 with chronic lymphocytic leukemia, 7 with chronic granulocytic leukemia, 4 with chronic erythremia or erythroleukemia, 4 with myelosclerosis and myeloid metaplasia, 11 with Hodgkin's disease, and 2 with subacute malignant reticulosis. A large percentage of patients showed pathological hemolysis; the most accurate methods of demonstrating this hemolysis were quantitative determination of fecal urobilinogen and determination of the survival time of transfused erythrocytes. The number of patients with a symptomatic hemolytic anemia in whom abnormal autoantibodies could be found was strikingly low. The abnormal erythropoiesis of these patients is not necessarily the only cause of their hemolysis. Normal transfused red blood cells also frequently disappear far too rapidly from the circulation. It must be assumed that abnormal activity of the spleen is an important factor in this mechanism, even without abnormal antibodies in the blood. The pathological hemolysis appears to be due, then, to the formation of erythrocytes with a reduced survival time and removal by the pathologically altered spleen of both homologous and transfused red blood cells. It is advisable to examine all patients with systemic diseases and anemia for abnormal hemolysis. The author believes that this hemolysis is extremely common in erythremia or erythroleukemia and in myelosclerosis with extramedullary hemopoiesis. Hemolytic anemia occurs far more frequently in lymphocytic leukemia than in granulocytic leukemia. Corticotropin and cortisone can cause striking improvement in the abnormal hemolysis not only in patients in whom abnormal autoantibodies have been demonstrated, but also occasionally in the absence of these antibodies. Splenectomy should be reserved for those few patients with a critical hemolytic anemia who respond not at all or insufficiently to hormone therapy. This study concerns cases of chronic leukemias only, but it has been recently shown by Schapira and co-workers that the anemia in patients with acute leukemia may often be the result of an abnormal hemolysis.

SURGERY

Ventricular Septal Defect: Clinical and Hemodynamic Patterns. S. G. Blount Jr., H. Mueller and M. C. McCord. Am. J. Med. 18:871-882 (June) 1955 [New York].

At the cardiovascular laboratory in Denver the diagnosis of isolated ventricular septal defect was made on clinical grounds in 63 of 580 patients with congenital cardiovascular disease. Cardiac catheterization was performed in 32 of these. The resulting physiological data confirmed the clinical impression in 21 patients. Evidence of an isolated ventricular septal defect was afforded by cardiac catheterization in two patients, in whom a diagnosis of pulmonary hypertension of unknown origin had been made. Twenty-three patients, therefore, presented conclusive evidence of an isolated ventricular septal defect and represent the basis for the present report. The patients ranged in age from 2 to 36 years. Analysis of the physiological data lead to the conclusion that the size of the ventricular defect was the sole factor determining the clinical findings. The physiological findings noted in four patients were compatible with the congenital anomaly that has been designated Eisenmenger's complex, namely, the presence of a systolic pressure in the right ventricle and pulmonary artery equal to or exceeding that in the systemic circuit, thereby resulting in a right-to-left shunting of blood. The authors think of the Eisenmenger complex not as an anatomic entity but as a stage in the natural history of the ventricular septal defect. Evaluation of the hemodynamic data of four other patients further supported this concept. These patients had marked pulmonary hypertension, closely approximating the systemic pressure, with extremely high pulmonary vascular resistances. The hemodynamic pattern of this group of patients differed from that in the first group of patients only by the absence of a definite right-to-left shunt at the time of catheterization, but cyanotic episodes with exertion were reported in three of these latter patients indicating intermittent right-to-left shunts. Thus the physiological changes in these two groups of patients differed only in degree. A distinctly different hemodynamic pattern characterized by moderate pulmonary hypertension and greatly increased pulmonary artery blood flow was noted in a third group. These patients had relatively large ventricular septal defects but had not developed changes decreasing the cross sectional area of the pulmonary vascular bed. Such changes may occur as the disease progresses, the patient ultimately presenting a clinical and physiological picture similar to that of the first two groups. A fourth group of patients showed little derangement from the normal hemodynamic pattern. The left-to-right shunt was of small magnitude. The authors believe that no surgical measures are indicated in patients with small ventricular septal defects in whom there is no significant pulmonary hypertension and left-to-right shunts are of small magnitude. Patients with large defects presenting severe pulmonary hypertension, marked increase in pulmonary vascular resistance, and left-to-right or right-to-left shunts of small volume probably have passed the stage where closure of the ventricular defect would produce significant beneficial results. The ideal candidates for closure of ventricular septal defects are therefore patients presenting mild to moderate pulmonary hypertension, slight to moderate increase in pulmonary vascular resistance, and left-to-right blood flow of high magnitude.

Experiences in the Course of Resection Therapy for Pulmonary Tuberculosis. H. H. Fiedler. Ztschr. Tuberk. **106**:77-83 (No. 2) 1955 (In German) [Leipzig, Germany].

On the basis of several case histories the author presents some experiences with the resection therapy of pulmonary tuberculosis. He warns against postponing resection too long in cases of unsuccessful collapse therapy. In one patient whose history is presented a lung had been practically destroyed by a number of cavities, despite various forms of collapse therapy and treatment with streptomycin and *p*-aminosalicylic acid. Although the patient showed signs of amyloidosis and her condition seemed rather hopeless, lobectomy was carried out. She died a week after operation, and autopsy revealed general intoxication and severe amyloidosis, particularly of both kidneys. Such general organic changes negate the result of a successful resection. Internal fistulas with residual empyema cavities are a definite indication for pulmonary resection. One of the case histories shows that previous ineffective thoracoplasty does not contraindicate a subsequent resection. On the contrary such patients tolerate resection well. Sanatorium therapy may prove helpful for patients who have undergone pulmonary resection.

Surgical Approach to the Vertebral Bodies in the Midlumbar Region for the Treatment of Limited Forms of Pott's Disease in the Adult. J. Debeyre, S. De Sèze and C. Moreau. Semaine hôp. Paris **31**:1729-1735 (May 20) 1955 (In French) [Paris, France].

The effective protection afforded by antibiotics has made it possible for the authors to operate on 35 patients with tuberculous osteitis without a single case of miliary dissemination or tuberculous meningitis. The lesions in the 11 patients reported on consisted of limited foci localized in the second, third, and fourth lumbar vertebral bodies. Most of the patients were young adults with recent lesions and backache of only a few months' duration. Their general condition was satisfactory and in none was the presence of an abscess detectable on clinical examination. The discovertebral involvement shown by the roentgenograms was not extensive, consisting merely of discreet compression of the disk and either a superficial erosion of the surface adjacent to the disk or of single or multiple geodes in the vertebral body. Other tuberculous foci, either elsewhere in the spine or in the viscera, were looked for but not found. Preoperative treatment consisted of absolute immobilization in a plaster cast and chemotherapy with streptomycin, *p*-aminosalicylic acid, and isoniazid for a period of one to three months. One month of preoperative treatment was considered adequate in most patients, because of the limited character of the foci and because administration of the antituberculous medications for a longer period might have led to the appearance of drug resistance. The lesions are often unilateral, leaving no doubt about the side from which they should be approached, but there are times when the choice of an approach is less easy because, whichever side is used, the removal of the focus may be inadequate, leading to fistulization. An operation in two stages, first from the right and then from the left, was made necessary in one patient by this complication. Exposure is obtained through a lumbar sympathectomy incision, the site of the lesion is identified, and the psoas muscle is explored. Intrapsoic abscesses, when found, should be opened and their contents evacuated. The affected disk and vertebral body are then curetted and the tuberculous focus completely removed. The procedure is well tolerated, and after the third month the patients can be allowed to be up, beginning with one hour a day. Six months after the operation, those who wish to do so can work half time. Full-time work can be resumed at the end of a year. All the patients, some of whom have been observed from one and a half to two years, seem to be cured, but the tendency of tuberculosis to become reactivated makes it advisable to withhold final judgment until a later time.

The Surgical Management of Funnel Chest. P. F. Hausmann. J. Thoracic Surg. **29**:636-648 (June) 1955 [St. Louis].

The author reports observations on 51 patients with funnel chest who were operated on, and on 10 patients in whom surgical treatment was deemed unnecessary. Five of the 51 operated on were under six months of age, 10 were over 5 years, and 36 ranged in age between 6 months and 4 years. The author believes that between 12 and 24 months is the ideal age for surgical treatment. There were no surgical deaths, and only one minor wound infection occurred. The simple ligament-cutting operation was performed in only two instances, both in children not over 4 months of age. The extensive subperichondrial resection of costal cartilages was done in the other 49 patients. The number of cartilages removed depended on the number involved in the deformity and varied from segments of three to six or seven cartilages bilaterally. The author was careful to remove all of the involved portion of each cartilage, because this eliminates the need for second operations for recurrent deformity. Subperichondrial resection is advisable because regeneration of cartilage or bone occurs rapidly, and adequate stability of the chest wall is assured in less than two weeks, and because by judiciously placing sutures in the perichondrium of resected ribs the shape of the chest wall can be altered within limits so that external fixation of the sternum is scarcely necessary to ensure regeneration of cartilage in the corrected position. In other words, the shape given to the anterior chest wall by carefully placed sutures in the perichondrium was made permanent by cartilaginous regeneration. Postoperative physical therapy in the form of breathing exercises, posture training, and shoulder exercise is another important factor in preventing the recurrence of funnel chest. Significant hypertrophy of the substernal ligament was noted in only 13 patients, and thickening of sufficient magnitude to cause abnormal traction on the lower sternum was observed in only five. It is difficult, therefore, to attribute the deformity to the pull of this ligament on the sternum. The deformity is primarily skeletal, due to an overgrowth of cartilage rather than to abnormal stresses on the skeleton by hypertrophied ligaments and diaphragmatic muscles.

Unusual Manifestations of Hyperparathyroidism. L. Goldman. Surg., Gynec. & Obst. **100**:675-689 (June) 1955 [Chicago].

The histories of seven patients show that, in spite of unusual manifestations of hyperparathyroidism, the chemical findings are a common denominator. Hypercalcemia is the most important of these chemical changes and requires accurate determinations of the serum calcium level. The incidence of hyperparathyroidism as a cause of renal calculi is sufficient to warrant chemical studies in every patient with nephrolithiasis. Local bone cysts, so-called giant cell tumors—particularly of the mandible—or generalized skeletal demineralization may be the presenting symptom. The presence of any of these signs is an indication for chemical and further roentgenologic studies. Nausea, vomiting, and dehydration may simulate acute gastrointestinal disturbances. The bone lesions heal following removal of the tumor or tumors, but the renal lesion is often progressive. Renal insufficiency and hypertension are common sequelae. Complete exploration of the thyroid area, the retrotracheal and retroesophageal areas, the anterior and posterior mediastinum, and the thyroid gland should be carried out in every patient before removal of any tissue. Attempts should be made to visualize all normal parathyroid glands. Signs of postoperative tetany occurred in every one of these patients when all hyperfunctioning tissue was removed. This sign is a welcome indication of complete ablation of all excess parathyroid tissue and should, therefore, be sought and confirmed before antitetanic therapy is started.

Gastric Carcinoma and Sarcoma. W. Walters. Postgrad. Med. 17:472-478 (June) 1955 [Minneapolis].

The author shows that improvements in the treatment of malignant lesions of the stomach have increased the five year survival rate by more than 180% in about 10 years. This increase has been due not only to the increase in the percentage of patients whose lesions have been removed by more extensive resection but also to a better understanding of how to prepare patients for operation by use of antibiotics when necessary, by better anesthesia, and by a better program of postoperative care based on the physiological requirements of each patient. Unfortunately 20 of each 100 patients with malignant gastric lesions coming to the Mayo Clinic from 1940 to 1950 were judged to have inoperable lesions on physical examination, and an additional 36 had lesions that were found at laparotomy to be inoperable. This means that 56 of each 100 patients lost any chance for a five year survival. A review of thousands of cases of cancer of the stomach observed at the Mayo Clinic disclosed that common causes of delay in recognizing the lesions were: (1) an erroneous diagnosis of benign peptic ulcer, with treatment for ulcer without x-ray examinations of the stomach and duodenum; (2) relief of symptoms by a medical regimen for ulcer leading to the erroneous clinical interpretation that the ulcer was benign; and (3) prolonged medical treatment of roentgenologically diagnosed "ulcers of the stomach" without repeated roentgenographic and gastroscopic examinations. Eighty per cent of patients operated on at the Mayo Clinic for gastric carcinoma who had histories typical of ulcer were relieved of symptoms, sometimes for months and sometimes for years, by a medical ulcer regimen. Other common causes of delay are: failure to recognize the significance of achlorhydria on gastric analysis and the value of gastric analyses in all middle-aged patients with dyspepsia; failure to recognize the value of abdominal exploration in patients with persistent dyspepsia or epigastric discomfort, especially when there has been loss of weight with and without anemia; failure to recognize that large gastric tumors may not be palpable because of their high location in the stomach (under the costal margin); and failure to persist in a clinical diagnosis and insist on abdominal exploration when x-ray examinations of stomach and duodenum have failed to demonstrate a lesion. Another common cause of delay in identifying the true character of the lesion is due to failure to advise removal of gastric polyps that may be malignant. Sarcoma of the stomach usually cannot be distinguished from carcinoma prior to operation. The sarcomas are usually lymphosarcomas, and they occur in the stomach in the proportion of about 5 to 100 carcinomas. The author advises resection with surgical removal of the lesion if possible, and if the lesion is a lymphosarcoma, x-ray therapy should be given when healing of the anastomosis is complete. Earlier recognition of the presence of a gastric malignancy is in the hands of the family physician and the internist.

Rupture of the Spleen. J. L. Connell. M. J. Australia 1:676-683 (May 7) 1955 [Sydney, Australia].

This report is concerned with rupture of the normal spleen, which is the most commonly damaged organ of the abdomen. The frequency of its rupture is due to its friable nature, the fact that it lies suspended by the lienorenal and gastrosplenic ligaments and is quite mobile, and the fact that the convex surface of the spleen is closely applied to the thoracic cage and any damage to the overlying ribs may rupture it. Rupture of the spleen may be present clinically in three forms. The most frequent form is primary rupture, in which splenic hemorrhage is immediate and continuous. These patients usually display obvious signs of internal hemorrhage. The second form is characterized by delayed clinical manifestations. Patients belonging to this group have a history of injury that usually produces shock. The patient recovers from this, apart from soreness over the lower left ribs. This group falls into two subdivisions: (1) symptoms and signs of shock and intra-abdominal injury return in a few hours, either slowly or very suddenly, and (2) the patient remains more or less asymptomatic for days, weeks or months, and then suddenly there is secondary bleeding from the damaged spleen, producing symptoms and signs. The last group comprises those patients in whom the splenic bleeding does not give rise to sufficient signs to merit laparotomy. In other words, they have a minor rupture of the spleen in which the diagnosis is not made and the laceration heals spontaneously. A ruptured spleen may produce a great variety of clinical symptoms and signs. There is nearly always a history of injury; this is most often a blow over the lower ribs on the left side, and frequently fractured ribs are present. However, the force may be applied anywhere to the abdomen, or it may be due to a fall from a height. Pain is invariably present and may vary from a dull ache to a most excruciating agony. Kehr's sign, which consists of pain in the left shoulder tip, is referred pain, due to irritation of the central part of the diaphragm. It is present in only about 25% of cases, and it has been given undue significance in the past. If the sign is absent it may often be produced by tipping the patient into the Trendelenburg position for a few minutes. Patients with pain in the shoulder or neck often state that the pain comes on only when they are in the supine position or is greatly accentuated by it. Frequently deep breathing will precipitate or enhance the pain. Some patients complain of discomfort in the rectum and tenesmus. This is due to blood in the pelvis, and peritoneal tenderness on rectal examination is often present and should be looked for. Pallor is almost constantly present and arouses suspicion of the diagnosis. There is abdominal tenderness and frequently distention. Increased dulness in the splenic area and in the left flank is of great significance. Roentgenologic signs of ruptured spleen are the following: increased density in the left hypochondrium, elevation of the left leaf of the diaphragm, displacement of the stomach to the right, and the presence of free fluid between loops of intestine. Abdominal paracentesis may prove helpful. Ruptured spleen is sometimes misdiagnosed, symptoms being wrongly attributed to fractured ribs or bruised muscles alone, ruptured intestine, ruptured liver, lacerated kidney alone, perforated ulcer, or ruptured ectopic gestation.

Present Rules of Surgical Treatment of Secondary Abdominal Echinococcosis: Based on One Hundred Ten Cases. B. Kourias. Lyon chir. 50:407-417 (May-June) 1955 (In French) [Paris, France].

Among 1,745 hydatid cysts operated on between 1914 and 1953 in Athens, Greece, 110 cases of secondary abdominal echinococcosis were found (6.3%). There has been some decrease in this form of hydatidosis in recent years. In 60% the primary cyst was located in the liver, in 6% in the spleen, and in 8% in both these organs; 35.4% were located in many organs, in 27% the dissemination was limited, and in 16% the cysts had invaded the pelvis and the genital organs. There were also some rare forms of the disease: hydatid choleperitoneum, hydatid ascites, hydatidosis with hernia, free cysts of the peritoneum, and pseudotuberculosis of hydatid origin, among others. The mortality rate was 8.1%. No deaths occurred after 1948 because of the reduced number of infected and ruptured cases. Modern surgical techniques used in the treatment of this disease include total or partial cystectomy, ablation of the parasitic cysts with primary suture with or without packing, marsupialization, minimal drainage, extensive resection, and the use of the thoracoabdominal route. Many patients who in the past would have needed two or more operations can now be cured by operation in one or two stages. Treatment of secondary abdominal echinococcosis by biological methods shows some promise but does not constitute definitive therapy for the basic disease. Since the improvement it brings is only temporary, the author concludes that the only rational treatment is operation.

Obstruction of the Small Intestine by Swallowed Foreign Bodies. J. Francillon and J. Moisant. Lyon chir. 50:418-425 (May-June) 1955 (In French) [Paris, France].

The treatment of ileal and jejunal obstruction caused by a swallowed foreign body depends on whether the obstructing agent is an inorganic object, something ingested as food, or material used for therapeutic purposes (usually synthetic mucilage taken in an effort to combat constipation). The clinical findings and prognosis for true (inorganic) foreign bodies are worse than for the other types. Good results of treatment depend mainly on early diagnosis, which allows enough time for an unhurried decision and the use of the simplest, most direct methods. In certain patients prompt operation is needed because of severe symptoms of obstruction, but, as a general rule, surgical treatment should be conservative. The decision whether or not to operate should be made according to case. If on laparotomy transparietal propulsion is inadequate or dangerous, enterotomy should be performed, where possible, in healthy tissue. Enterectomy is reserved for those lesions of the intestinal wall that are definitely or probably irreversible. Exteriorization and shunting are only palliative measures and are of little value.

Comminuted Fractures of the Patella. H. R. Schönbauer. Arch. orthop. u. Unfall-Chir. 47:266-271 (No. 2) 1955 (In German) [Munich, Germany].

From a series of 574 patients with 578 patellar fractures the author selected 32 of the most severe (crushed or comminuted) fractures for study. The therapeutic results were analyzed with regard to the preservation or removal of the patella. After extirpation of the patella the functional result was better, and no arthrosis of the knee-joint developed. The duration of treatment was neither shortened nor prolonged by extirpation. Although there was a greater reduction in the capacity to extend the knee-joint, and the extensor muscles of the thigh showed more severe atrophy after patellar extirpation, the resulting subjective symptoms were slight. None of the patients in whom the crushed patella was removed were obliged to change their occupation, nor did they become unable to participate in sports, whereas this did happen in those in whom the patella was preserved. The restoration of the extensor apparatus of the knee-joint depends on the restoration of the gliding surface of the patella with simultaneous suture of the torn reserve extensor apparatus. If the patellar gliding surface cannot be restored, it is best to remove the entire patella.

Evaluation of Results of Digital Flexor Tendon Grafts. J. H. Boyes. Am. J. Surg. 89:1116-1119 (June) 1955 [New York].

The result of a surgical procedure can be evaluated in the same way as the result of any manual art if three fundamentals —materials, principles, and technique—are considered and if the result can be measured and recorded in a single unequivocal figure. The author devised such a standard of judgment for digital flexor tendon grafts. The result can be expressed in a single figure and accounts for variations in the three factors mentioned. Results of flexor tendon grafting in the digits are best when tissues are least damaged, when a full-length graft is used, and when exacting technique is followed. Under these conditions it has been shown that 25% of all graftings will result in flexion of the pulp of the finger to reach the distal crease of the palm; in 50% flexion will occur to within one-fourth of an inch; and all will flex to within ¾ in. of the distal crease of the palm.

Treatment of Postoperative Vomiting. P. S. Marcus and J. C. Sheehan. Anesthesiology 16:423-427 (May) 1955 [Philadelphia].

Marezine (a brand of cyclizine lactate) had been investigated by others in the oral form. This report is concerned with the injectable form. It has an atropine-like and an antihistamine-like action. In a preliminary study the incidence of postoperative vomiting was ascertained in 1,000 consecutive patients and was found to be 21.3%. Of 100 consecutive patients anesthetized with some type of general anesthetic who had not received Marezine, 19 had postoperative vomiting, and in 100 consecutive patients who received spinal anesthesia the incidence of vomiting was 18%. This makes the combined incidence 18.5%, which is within range of a general incidence of 21.3%. Marezine was given both prophylactically and therapeutically to 322 patients. If it is given in doses of 50 mg. for adults and 25 mg. for children and is administered in the deep subcutaneous tissue one-half hour before the contemplated end of the surgical procedure, the postoperative vomiting will be decreased. In this series the incidence was reduced from 18.5% to 10%. Marezine seemed to be of value in arresting further vomiting during the immediate postoperative period. The authors believe that this should be investigated more fully in an attempt to evaluate the usefulness of the drug if continued through the first 24 to 36 hours of the postoperative period. In this series it produced no local reaction and no untoward effects.

NEUROLOGY & PSYCHIATRY

Evaluation of Nerve Lesions After Intramuscular Injections. W. Fuhrmann and G. Gruenwaldt. Chirurg 26:210-216 (May) 1955 (In German) [Berlin, Germany].

The authors had to give expert testimony in seven cases in which lesions of the sciatic nerve resulted from intragluteal injections. There were three children among the five patients in whom a lesion of the sciatic nerve resulted from injections of sulfonamide preparations. In this connection the authors mention six other children in whom lesions resulting from injections caused paralytic clubfoot deformities. These experiences indicate that particularly in children great caution is necessary when intramuscular injections are given, the more so since the prognosis as regards recovery is rather poor. After four months to six years only 2 of 13 patients showed even slight improvement of the nerve lesion. The authors showed that an atypical course of the sciatic nerve cannot explain the nerve damage after an intragluteal injection; a local nerve lesion can be differentiated from toxic polyneuritis; and lesions resulting from strangulation by scar tissue and secondary degeneration of the nerve have been observed but are extremely rare. These can be assumed as the cause only if there have been no pains during and for several days after the injection and if the paralytic symptoms developed slowly. Experimental studies indicated that sulfonamide preparations as well as irgapyrine, which contains equal parts of phenylbutazone and aminopyrine, may cause nerve lesions, provided they reach the nerve. There is, however, no proof that with careful injection technique the drug will penetrate to the nerve. The assumption that the drug may be dispersed in the musculature and may advance to the nerve can be made only if there is no pain during the injection and the paralysis develops slowly over several hours or days after the injection. If there is pain during the injection or immediately after it, a defective injection technique must be assumed. All experiments were made with concentrated drugs. The fact that damage from injections is relatively rare might be interpreted as proof of the fact that even in patients in whom the drug is widely distributed within the tissues only slight quantities would reach the nerve, and if so, in an extremely diluted state. Such slight concentrations would not cause paralysis. Thus, using a correct technique will probably prevent injurious effects. The intragluteal injection should be made at least two fingerbreadths below the crest of the ilium, and the point of the needle should be directed toward the crest of the ilium, and the injection should be made slowly. This method was used in over 6,000 injections of irgapyrine, and there was not a single case of nerve injury.

Neurosurgery of the Ansa Lenticularis in Dyskinesia and Parkinson's Disease: Principles and Techniques of a Personal Intervention. F. Fénélon. Semaine hôp. Paris 31:1835-1837 (May 26) 1955 (In French) [Paris, France].

The author has treated 61 patients with dyskinesia by electrocoagulation of the ansa lenticularis: one with choreoathetosis and 60 with paralysis agitans. His method uses the transfrontal route as the least harmful. Physiologically, the procedure appear rational because it treats extrapyramidal disease in the extrapyramidal tract, intervening immediately below the primary lesion. The operative mortality in the series was two, both patients being extremely poor risks. Results were good in 70% of the remaining patients, followed for from six months to four years.

Hereditary Tremor. B. V. Jager and T. King. A. M. A. Arch. Int. Med. 95:788-793 (June) 1955 [Chicago].

In a single family with hereditary tremor, 24 members, extending over four generations, were examined for this trait. Neurological examination showed wide variation with regard to severity of tremor, even in siblings of about the same age. A tremor of the upper extremities was observed in 19 of the 24 persons, but on the basis of questioning numerous members of the family only 4 of the 24 were thought to have this difficulty; two others were presumed to have "shaking palsy." Most of the affected persons were aware that emotional factors aggravated the tremors and that alcohol afforded some relief. The diagnosis of hereditary tremor may not always be easy. The familial history in conjunction with the presence of static and intention tremor and in the absence of other neurological changes usually permits a diagnosis. Difficulty arises in that one occasionally sees similarly distributed tremors in the absence of a familial history. In such cases it would be advisable to examine many other members of the family, since milder forms of tremor frequently go unrecognized. Basically, the symptomatology of hereditary tremor is that of a neocerebellar-like disorder. Many familial and nonfamilial diseases exist in which cerebellar symptoms are prominent, but disorders of gait and other neurological abnormalities of a noncerebellar type may also be present in such patients. In hereditary tremor, the gait and equilibrium are unimpaired. In the family studied, the pattern of inheritance of the disorder appears to be that of a simple somatic dominant. Treatment of hereditary tremor is unsatisfactory. Differential diagnosis from paralysis agitans and reassurance as to the benign character of the disorder are important.

Treatment of Multiple Sclerosis with Low-Fat Diet: Results of Five and One-Half Years' Experience. R. L. Swank. A. M. A. Arch. Neurol. & Psychiat. 73:631-644 (June) 1955 [Chicago].

A low-fat diet was used in 264 patients with multiple sclerosis. Continuous contact was maintained with 210 of the 264 patients, and 158 of these have remained on the low-fat diet. The present report deals mainly with the first 47 patients to be placed on the diet who remained on diet and who have been followed closely for four to six years. The following foods were forbidden: whole milk, butter, cream, cocoa, chocolate, and all foods containing these substances. The diet permitted 15 gm. of hard fats (animal fats, margarine, lard, and shortening) and 15 gm. of vegetable oil or a substitute per day. In so far as possible, the intake of fat should be evenly distributed throughout the day. All patients should consume at least one egg and 5 cc. of cod liver oil daily. Fats or oils used for cooking or baking must be included when determining the daily fat intake. Substitutes for these amounts of fats in the form of fowl, lamb, beef, liver, and so on are listed, as are also the permitted foods. This diet seemed to lessen the severity of the disease by reducing the frequency and severity of the exacerbations. Its usefulness is greatest early in the disease, before significant disability and a steady progression of symptoms have developed. The period of observation has now been sufficiently long to give the author some confidence in his observations. Serious consideration is given to the hypothesis that patients with multiple sclerosis have a basic defect in the suspension stability of their blood, which is upset by the hyperlipemia following heavy fat meals.

On the Prognosis of Brachialgia. A. Bergsman, G. von Reis and F. Sahlgren. Acta med. scandinav. 151:391-398 (No. 5) 1955 (In English) [Stockholm, Sweden].

A follow-up study lasting up to eight years was made of 100 patients with brachialgia. Forty-eight patients were classed as group 1 because they had symptoms suggestive of a nerve root lesion (radicular distribution of pain, intensification of pain on coughing and sneezing, precipitation of the pain by the neck-compression test with radiation into the arm, sensory disorders, reflex disturbances, and pareses). Group 2 consisted of 38 patients in whom the presence of a cervical disk lesion was highly probable but in whom the diagnosis could not be confirmed by the symptoms mentioned above; the psychoneurotic element in them was not considered important. The remaining 14 patients were classed as group 3 because the neurotic factor played a large part in their disease. A further division of the patients into those with an observation period of less than four years and those with more than four years' observation showed that of 56 patients in the first category 27 and of 44 in the second category 19 obtained complete relief. Thus, patients with brachialgia usually regain a certain amount of working capacity fairly soon, although in many instances full restoration may take a long time. The prognosis is good, even in patients with a high degree of disability. A psychoneurotic component is a bad prognostic sign, however, as shown by the fact that only one of the 14 patients in group 3 regained full working capacity during the period of observation. Symptoms suggestive of nerve-root lesion show a definite tendency to disappear as early as two years after onset. Only rarely do they last as long as eight years.

GYNECOLOGY & OBSTETRICS

Pregnancy After Vaginal Operation. M. Olki and O. Kinnunen. Acta obst. et gynec. scandinav. 34:30-40 (No. 1) 1955 (In German) [Stockholm, Sweden].

A questionnaire concerning postoperative pregnancy was sent to 363 women less than 40 years old who had undergone vaginal operations. Of the 202 women who answered the questionnaire, 57 had operations involving vagina and cervix (group 1), 14 operations for fistulas (group 2), 36 operations for incontinence (group 3), 15 minor vaginal operations (group 4), 43 major vaginal operations (group 5), 32 minor cervical operations (group 6), and 5 major cervical operations (group 7). Seventy-five (37%) of the 202 patients became pregnant after the operation, 16 in group 1, 6 in group 2, 8 in group 3, 8 in group 4, 16 in group 5, 18 in group 6, and 3 in group 7. Thus the postoperative incidence of pregnancy varied from 28% to 60% depending on the type of operation performed. Postoperative dyspareunia was rarely complained of, but in each of the seven groups most of the women practiced contraception. In 65 of the 75 pregnant women, the pregnancy continued to term. Delivery was normal in 52, 11 underwent cesarean section, and in 2 forceps delivery was necessary. In 5 (7.7%) of the 65 patients the vaginal operation was the direct indication for cesarean section. The authors' observations showed that a vaginal operation performed on a woman of reproductive age does not have any untoward effect on either sexual intercourse or a subsequent pregnancy.

Latent Genital Tuberculosis in Women. I. Halbrecht. Rev. méd. Cordoba 43:89-94 (March) 1955 (In Spanish) [Cordoba, Argentina].

A series of 2,500 sterile women was observed for five years. Of these, 160 had latent genital tuberculosis as verified by: (1) cultures of menstrual secretion, (2) endometrial biopsy or endometrial curettage, or (3) histological examination of the oviducts, surgically removed for tubal occlusion. Sterility was primary in all patients but three who had one or more than one child before becoming sterile. Early signs observed in these patients indicated that sterility caused by genital tuberculosis is due to unilateral or bilateral partial or total occlusion of the oviducts or to rigidity of the tubes from scar formation or inflammation. Genital tuberculosis as a cause of sterility should be searched for in all patients who suffer from extragenital tuberculosis or have a history of extragenital tuberculosis and pleurisy. The extragenital tuberculosis is latent and follows a slow course, but it may remain potentially active for a long time after cicatricial regression or complete cure of the original primary focus of tuberculosis. Genital tuberculosis in women as a cause of sterility calls for treatment, preferably with streptomycin and *p*-aminosalicylic acid. This treatment was given to 75 patients who were observed for two to five years. Sixty were cured and eliminated no more tubercle bacilli in the urine. Three of the patients who had antibiotic treatment for latent genital tuberculosis restricted to the oviducts became pregnant after treatment and had normal full-term babies. Forty patients had antibiotic treatment when the endometrium was already involved. Only one became pregnant and had an abortion in the third month of pregnancy. None of the patients in this group received intrauterine application of radium. The author, however, has observed unfavorable results in six patients. Recurrence of genital tuberculosis after intrauterine application of radium was frequent and radium caused complete atrophy of the endometrium in two of six patients treated.

PEDIATRICS

Effect of Triethylene Thiophosphoramide in the Treatment of Leukemia and Certain Lymphomas in Infants and Children. N. J. Smith, S. Rosello and H. Shay. *J. Pediat. 46:493-505 (May) 1955 [St. Louis].*

Many ethylenimine derivatives were investigated for their effects against experimental leukemia in rats. N, N', N'', triethylene thiophosphoramide (thio-TEPA) was among the most effective, and so it was used in a large number of patients with leukemia, lymphomas, and inoperable malignant growths of various types. The experience with this drug in children is reviewed. Twenty-one patients under the age of 15 years were treated with thio-TEPA in a 12-month period. There were 12 children with acute leukemia, 3 with differentiated types of myelocytic leukemia, 5 with lymphosarcoma, and one with Hodgkin's disease. This agent seems to be of use in the temporary control of lymphosarcoma and chronic forms of leukemia. It is contraindicated in the therapy of acute leukemias of childhood. The toxic manifestations from overdosage of the agent have been limited to bone marrow depression. If this complication is to be avoided therapy must be guided by careful clinical and laboratory evaluation of the patients during the course of treatment. Thio-TEPA appears to have the advantage of a wider margin of safety between the toxic and therapeutic doses than do other ethylenimine derivatives currently available.

Influence of Type of Feeding on pH of Stool, pH of Skin, and Incidence of Perianal Dermatitis in the Newborn Infant. A. G. Pratt and W. T. Read Jr. J. Pediat. 46:539-543 (May) 1955 [St. Louis].

Perianal dermatitis is frequently seen in hospital nurseries. The severe form is characterized by multiple, small, superficial ulcerations, while mild disease may often be missed unless the buttocks are manually separated. Perianal dermatitis is not to be confused with diaper rash, which occurs later and affects the convex surfaces of the thighs and buttocks and the pubic region. Perianal dermatitis has been shown to be more frequent among the artificially fed infants than in the breast-fed infants. The substitution of lactose for vegetable carbohydrate in the formula has lowered the incidence significantly. It has been postulated that this difference may be due to a variation in stool pH. To determine the effect of various feedings on pH of the stool and of the skin, and on the relation of pH of the stool to incidence of perianal dermatitis, examinations were made on 251 newborn infants, of whom 140 were breast-fed, 50 were fed a prepared formula approximating human milk, and 61 were fed an evaporated cow's milk and maltose-dextrin formula. During the first three days of life there was little difference in mean pH observations regardless of feeding. From the fourth day, pH of the stool and of the perianal skin became increasingly acid for the breast-fed infants and for those fed simulated human milk, but remained relatively unchanged for those fed the cow's milk formula. The axillary skin pH became more acid with age regardless of feeding. The incidence of perianal dermatitis varied with the pH of the stool and of the perianal skin, being less frequent the more acid the stool and perianal skin. These findings support the belief that the stool pH of infants is directly affected by the type of feeding. The perianal skin with which the stool comes into contact is correspondingly changed. If the pH of the stool is such that the perianal skin pH is raised above the range found in breast-fed infants, the incidence of perianal dermatitis is increased.

Pneumonia Complicating Oral Thrush Treated with Mycostatin, a New Antifungal Antibiotic. A. J. Beckmann and J. E. Navarro. J. Pediat. 46:587-591 (May) 1955 [St. Louis].

Thrush caused by Candida (Monilia) albicans is a common oral infection in newborn infants, its incidence being as high as 20% in some newborn-infant nurseries. Some investigators established that oral thrush developed in each instance in which C. albicans was found in the mouth of a newborn infant but in no instance when only other forms of yeast were present, and that the average interval after birth for the development of clinical thrush was 8.2 days. There seems to be a relationship between maternal vaginal moniliasis and oral thrush, but infection may occur also by contact other than directly from the vagina. Pneumonia and esophagitis are possible complications of oral thrush in the newborn infant. In one infant the monilial infection was found on the 10th day of life and did not respond to topical medications. A few days later there was a deterioration of the general condition with symptoms of severe respiratory distress. The antibacterial drugs given at first did not relieve either the thrush or the respiratory distress. Mycostatin, a new antifungal agent, was given in the form of a flavored powder. One teaspoonful (175,000 units) was mixed with 1 oz. of milk and administered by spoon every six hours. Within 48 hours improvement of the oral lesions was evident. After the supply of Mycostatin powder was exhausted, tablets containing 500,000 units each were crushed, and one was given in milk four times a day. Coincident with this increase of dosage, looser, more frequent, and darker-colored stools were noted. After six days the flavored powder was again available and two teaspoonfuls were given every four hours. Stools gradually returned to normal without special treatment. Clinical and roentgenological improvement of the pulmonary condition was noted in two weeks. The infant was discharged one month after admission.

Pediatric Allergy. S. C. Dees. M. Ann. District of Columbia 24:225-232 (May) 1955 [Washington, D. C.].

In spite of the trend toward earlier diagnosis of an allergic basis for nasal symptoms, this cause for so-called colds is still not recognized in many children, perhaps because the symptoms are not seriously incapacitating. The diagnosis of allergic rhinitis is usually simple. The nasal mucosa has a pale boggy appearance; the turbinates are large and obstruct the nose; and the discharge is a clear, nonirritating mucus. Staining nasal discharge for eosinophils is a reliable laboratory test. Whereas eosinophils indicate an allergic rhinitis, polymorphonuclear neutrophils predominate in infectious rhinitis. After symptomatic treatment of allergic rhinitis, in which antihistamines may be helpful, efforts should be made to discover the cause and to treat it either by avoidance or desensitization. Infants and young children tolerate desensitizing injections as well as, or better than, older children and adults. Asthma, particularly the first attack, is frequently diagnosed by exclusion of other conditions. If the physician knows that the child has had feeding difficulties relieved by diet changes; frequent colds without much fever, controlled by antihistamines, and not contracted from others; a skin rash such as eczema or hives; and a family history of allergy, he may assume that the wheezing is asthma, no matter how young the patient. Eosinophilia in the nasal secretions and in the blood is likewise of diagnostic value. The mother should be asked to describe the first attack of wheezing, including where the child was and what he was doing. This may identify the causative allergen. If the first attack cannot be clearly recalled, or the trouble began insidiously, infection may be the cause. True asthma responds promptly to epinephrine and aminophylline. If such relief does not occur, either the disorder is not asthma, or it is accompanied by infection. Skin tests may give valuable corroborative evidence. The histories and chest roentgenograms of five children, who were believed to have asthma, show the difficulties involved in diagnosing asthma in young children. The final diagnosis in these cases was foreign bodies in the air passages, cystic fibrosis of the pancreas, and atelectasis or asthma. Acute respiratory distress due to almost all causes is improved by oxygen, removal of obstruction to the airway, and relief of the anxiety that accompanies anoxemia. Moderate sedation is helpful for the anxiety, but opiates have no place in the treatment of asthma. In desperately ill asthmatic patients intravenous administration of corticotropin or hydrocortisone is usually effective in three or four hours. Intramuscularly injected cortisone may not exert its full effect for 48 hours after it is given, and its effect will last that long after the last dose. Orally administered cortisone is effective for eight hours, and therefore doses should not be more than eight hours apart. Corticotropin and cortisone may produce hypertension, salt retention, and potassium deficiency; furthermore, they do not cure allergy. Antibiotics should be used with caution in allergic children, because they have a higher rate of sensitization to these drugs than do nonallergic persons. The physician should ascertain whether there is a real need for antibiotics, and he should inquire about any reaction to previous courses of the drug.

DERMATOLOGY

Silicon in Prophylaxis and Therapy of Industrial Dermatoses. H. Järnecke. Deutsche med. Wchnschr. **80**:755-756 (May 13) 1955 (In German) [Stuttgart, Germany].

Silicon-protective (Setaderm-protective) ointment consists of methylpolysilicon oil on a nonirritating wax base. This oil is intermediate between organic and inorganic compounds. Its basic structure consists of silicon atoms that are united by oxygen atoms, and, therefore, it has a chemical structure similar to that of sand and quartz. Various organic groups are bound to the silicon, and thus a highly stable molecular structure results. Because of this structure the methylpolysilicons are highly resistant, chemically indifferent, and stable on heating and cooling, and have a high surface activity. Combined with wax they form a film, which spreads as a protective layer on the skin and excludes dirt, water, and watery solutions. The effect of the pure silicon oil on the skin was tested in 52 persons, and none of them suffered any damage to the skin, although some showed a positive reaction to a simultaneously performed soap test, suggesting a general hypersensitivity of the skin. One hundred forty-eight workers with industrial dermatoses were then treated with the silicon-protective ointment. After the application of the ointment the eczematous lesions healed, and new irritations of the skin no longer occurred. Therapeutic failures were observed in only 5 of the 148 patients.

Hirsutism. K. R. Crispell, W. Parson, G. F. Hollifield and others. GP **11**:82-92 (May) 1955 [Kansas City, Mo.].

Patients with hirsutism may be placed in one of three categories: hirsutism with virilism, hirsutism with a nonvirilizing endocrine disorder, or hirsutism with no recognizable endocrine disorder. The reason for the condition can almost always be discovered, but unfortunately the hirsutism does not always disappear after correction of the underlying endocrinopathy. Most hirsutism is of the idiopathic variety for which the only treatment is manual removal of the hair. Although the nature of the basic disease in the authors' 12 patients ranged widely, hirsutism was usually the complaint that brought them to a physician. The second most common complaint was irregular menses. One of the patients had hirsutism with mild virilism that had been induced by the administration of androgen. The hirsutism did not completely disappear on discontinuation of this treatment. The authors warn against the irrational use of androgen therapy in any woman.

Premalignant Fibroepithelial Tumors of Pinkus and Basocellular Epithelioma: Based on Two New Cases. R. Degos and J. Hewitt. Ann. dermat. et syph. **82**:124-139 (March-April) 1955 (In French) [Paris, France].

Two new cases of fibroepithelial tumors bring the number reported to nine, when added to those originally described by Pinkus in 1953 and those identified by him in the literature. The tumors remain benign for long periods of time. They are often multiple. They are often confused with fibromas, seborrheic verrucae, or superficial epitheliomas. Their histology is characteristic, however; it shows an epithelial network that gives rise to basocellular buds and a fibromatous hyperplasia of the dermis. These tumors develop into basocellular epitheliomas and are to be considered a special variety of this lesion. One of the authors' patients had tumors from childhood; this would seem to support the concept of a nevoid, embryonic origin of basocellular epitheliomas, which is not in accordance with the ideas of Pinkus. Another previously unreported characteristic that may be present in fibroepithelial tumors is the presence of horny excrescences. This complicates the differential diagnosis from seborrheic verrucae.

UROLOGY

Considerations on Renal Tuberculosis. G. Aveta and G. Sesia. Minerva med. **46**:749-756 (March 21) 1955 (In Italian) [Turin, Italy].

Good therapeutic results with the use of streptomycin and Pasdrazide, a drug in which isoniazid is combined with *p*-aminosalicylic acid (PAS), are reported in patients with renal tuberculosis. The action of this combination, which was always well tolerated, was more marked than that of either drug when used alone. It could be given also to patients who had shown intolerance to *p*-aminosalicylic acid and resistance to it or to isoniazid. Streptomycin and Pasdrazide are indicated for patients with bilateral renal tuberculosis; for those in whom in the presence of bacilluria and pyuria, lesions are not evident on the roentgenograms; for those with forms of superinfection; for the presurgical preparation of patients; and for the postoperative course. Postoperatively, they are a useful adjuvant in the treatment of residual cystitis and they shorten the period in which the patient is bedridden. The medical treatment of renal tuberculosis should be prolonged for one to two years, and courses of therapy should alternate with short treatment-free periods. The authors have adopted the following regimen: 0.5 to 1 gm. of streptomycin and 6 tablets (300 mg.) of Pasdrazide daily for 15 days; then 300 mg. of Pasdrazide daily for 15 days; and then 2,000 units of vitamin D_2, 10,000 units of vitamin A, and one tablet of thiosemicarbazone every day for 15 days. Five such cycles of therapy should be given during the first year and four during the second. Despite the good effects of this medical therapy, the organism's defense reaction, together with rest, a good diet, and the climate, plays a great role in bringing about recovery in patients with renal tuberculosis.

Further Studies on Absorption Through the Human Bladder. N. S. R. Maluf. J. Urol. **73**:830-835 (May) 1955 [Baltimore].

At the urologic surgical service of the Veterans Administration Hospital in Houston, two patients who were ideal for the study of absorption through the human bladder were observed. They had undergone abdominoperineal resection of the rectosigmoid for carcinoma of the rectum. After several months they were readmitted with dyspnea, nausea, vomiting, generalized edema, oliguria, uremia, advanced acidosis, and hyperkalemia. Cystoscopy disclosed bladders with practically normal lining and no invasion by tumor. There was advanced bilateral hydronephrosis owing to near-complete low ureteral obstruction. These findings and the known history of the patients indicated bilateral ureteral obstruction secondary to extension of adenocarcinoma of rectum. Palliative cutaneous ureterostomy was performed in both patients. Diuresis set in promptly after release of the ureters from obstruction, and the postoperative course was smooth. Urinary drainage was through 18 F whistle-tip latex catheters in the dilated ureters. The studies described were carried out during the six weeks to four months after the ureterostomy. When cystoscopy was repeated after this lapse of time, the lining of the bladder was still free from tumorous invasion. Essentially the same technique was used as had been employed during a previous study. A known volume of isotonic sodium chloride solution was introduced into each bladder. After four hours the volumes in the bladder were unchanged and the alterations in total Na^+ and Cl^- in the bladder were within the limits of error. The author's previous observation that there is practically no net absorption of water, Na⁺, or Cl⁻ from an isotonic solution of sodium chloride in the bladder was thus confirmed. Other tests revealed that Na⁺ and Cl⁻ were absorbed through the bladder from hypertonic sodium chloride solution, and water simultaneously entered the bladder. There was no significant net absorption of K⁺ or Cl⁻ through the bladder from moderately hypertonic potassium chloride solution. Urea was absorbed appreciably through the bladder from a hypotonic solution of urea. Water was simultaneously absorbed from the bladder. Dextrose was not appreciably absorbed through the bladder. Water was not absorbed appreciably from moderately hypotonic glycine. Urokon (Na 3-acetylamino-2,4,6-triiodobenzoate) was absorbed through the bladder from high concentration and capable thereby of yielding an excellent pyelogram. I⁻ was absorbed through the bladder from sodium iodide in high concentration. A weak pyeloureterogram can thus be obtained. Plain water, introduced into the bladder, is absorbed slowly. These data are all explicable by simple diffusion.

Hypernephroma and Polyglobulism. H. Gros. Medizinische No. 19, pp. 706-708 (May 7) 1955 (In German) [Stuttgart, Germany].

The rare simultaneous occurrence of hypernephroma and polycythemia is described in a 53-year-old man who had had intermittent macrohematuria for one year when he was admitted to the medical clinic of the University of Mainz, Germany. He had pains in his left side and a flushed face. The erythrocyte count was 7,500,000 per cubic millimeter; the hemoglobin level was 125%; the leukocyte count was 6,300 per cubic millimeter; and the platelet count 160,000 per cubic millimeter. The urine contained many erythrocytes. A large, hard tumor with a fairly smooth surface was palpable in the left upper abdominal quadrant. It extended almost to the umbilicus but also was palpable in the left renal region. A tentative diagnosis of hypernephroma was made with the aid of pyelography. Nephrectomy was performed and a hypernephroma with the typical structure of Grawitz's tumor was removed. On discharge from the hospital the erythrocyte count was 3,300,000 per cubic millimeter, and the hemoglobin level was 68%. The blood count and color of the face remained normal for three years after the operation and the patient was considered cured. Only three similar cases were collected from the literature. Hematuria of prolonged duration was the initial symptom in all these patients. The author agrees with other workers that the cause of the polycythemia, which occurred simultaneously with the hypernephroma and which disappeared with the removal of the tumor, must have been in the kidney and its tumor. A cause and effect relationship is highly probable, but its mechanism cannot be explained. Hematuria associated with polycythemia may result from congestion or renal infarction, while hypernephroma as a rule may be associated with anemia. The possibility of hypernephroma should be considered in the differential diagnosis of polycythemia associated with hematuria, and urologic examinations should be performed accordingly.

Diagnosis and Treatment of Pyelonephritis in Diabetes Mellitus. G. E. Joron, J. deVries, G. Reid and others. Diabetes 4:99-103 (March-April) 1955 [New York].

Autopsies have revealed pyelonephritis in 18 to 22% of diabetic patients, in contrast to 3 to 4% of the general population. Clinicians do not diagnose pyelonephritis nearly so frequently, because diabetic patients may not present the usually described picture of acute pyelonephritis with chills and lumbar pain. Frequency and burning on urination may be absent or, if present, attributed to the diabetes. In most patients there are no subjective symptoms or physical signs to direct attention to an infective process involving the kidneys. In order to establish criteria for the clinical diagnosis of pyelonephritis and to assess the methods of treatment, the authors obtained specimens of bladder urine from 409 diabetic patients and from 280 nondiabetic controls. Catheter specimens of urine were obtained in women, and midstream voided specimens in men. Micro-organisms were found in the urine of 61% of diabetic patients (men and women) compared with 59% of male and 43% of female control patients. This high incidence of infection in men of both groups was unexpected, but may perhaps be accounted for by the advanced average age of the patients, which was 56 years in the men and 60 years in the women. Pyuria was found in 19% of the diabetic men and in 25% of the diabetic women compared with 9% in the control patients of both sexes. Forty-one patients with positive cultures of bladder urine but without urinary complaints were cystoscoped, and cultures of ureteral urine and retrograde pyelograms were obtained. The results suggest that pyelonephritis is present or likely to develop if the same organism is recovered repeatedly from the bladder urine, particularly if there is associated pyuria. Pyelography was of little help in the diagnosis of pyelonephritis. Three types of pyelonephritis are recognized clinically: (1) chronic pyelonephritis without evidence of renal damage or systemic toxicity, (2) chronic pyelonephritis with evidence of renal damage or systemic toxicity, and (3) acute pyelonephritis. For the patients without evidence of chronic pyelonephritis the authors recommend a two-week course of treatment with a suitable antibacterial agent. At the end of this period some will be cured. If not, the course may be repeated in special circumstances, but it seems unwise to pursue therapy indefinitely in every case, because many patients have chronic urinary tract infection for decades without much evidence of harm. In the patients with evidence of renal damage, the authors used prolonged treatment with frequent sensitivity tests and a variety of antibacterial agents. Treatment often increased the patient's sense of well being, even before there was any change in urinary findings. The treatment of acute pyelonephritis must be intensive from the start, since the disease may rapidly become fatal.

INDUSTRIAL MEDICINE

Hydrocortisone in the Treatment of Ganglia. R. E. Rich. J. M. Soc. New Jersey **52**:260-261 (May) 1955 [Trenton, N. J.].

It has been shown that excessive muscular exercise stimulates the tissue in close proximity to joints and tendon sheaths, and that this may cause inflammatory irritation, degeneration, and cyst formation. This being a rational explanation of the cause of a ganglion, the use of an anti-inflammatory substance such as hydrocortisone was tried and found to reverse the process that initiates ganglion formation. An isotonic sodium chloride suspension of hydrocortisone acetate containing 25 mg. per cubic centimeter is injected directly into the ganglion without any attempt to aspirate fluid. The skin is sterilized with 70% alcohol, but no local anesthetic is used. The author prefers the 25-gauge needle, ½ in. long. After injecting the hydrocortisone into the ganglion, a small dressing is applied, and the patient can then return to regular work. The amount of hydrocortisone injected depends on the size of the ganglion. The author rarely injects less than 0.3 or more than 0.5 cc. of hydrocortisone suspensions. The patient is examined daily, and in rare cases a new injection may be required after an interval of one week. The author found this treatment helpful in his capacity as a plant physician at a lamp factory where the operators are mostly women who perform finger, hand, and wrist motions many times daily, with resultant increase in the number of ganglions.

Pulmonary Changes Developing in Workers in the Aluminum Industry. F. Géher. Fortschr. Geb. Röntgenstrahlen **82**:598-604 (May) 1955 (In German) [Stuttgart, Germany].

In studying hygienic conditions in the aluminum industry, Géher examined about 1,000 workers, who were employed in one bauxite mine, in two plants producing aluminum oxide (alumina), and in two alumina-reduction plants. In examining the workers, special attention was given to the occupational history and to respiratory symptoms. Workers with active tuberculosis and with other serious organic disorders had been excluded from working in the aluminum industry by preemployment examinations. Each worker was subjected to thoracic fluoroscopy, and roentgenograms were made whenever there was the slightest suspicion of a pulmonary lesion. Two types of pulmonary lesions were observed, but these do not constitute definite stages of aluminosis, the one more or less merging into the other. Unilateral or bilateral fine strand-like shadows and some pale foci characterize the first type, whereas in the second type the foci are closer together and confluent within the denser areas. The author found that aluminosis developed in 3.5% of the workers exposed to bauxite dust, 4.9% of those exposed to alumina dust, and 6.3% of the workers in the reduction plants, who inhale both alumina and cryolite dusts. No progression was noted in the aluminotic lesions during two years of observation. Since none of the workers was exposed to the inhalation of the dust of metallic aluminum, the author had no occasion to observe the more severe lesions produced with this form of exposure. In contrast to the results of previous investigations, the author believes that inhalation of alumina produces pulmonary changes, but their rapid progression is improbable as long as the working environment does not deteriorate, that is, if the dust counts are kept down.

Roller and Wringer Injuries: Clinical and Experimental Studies. M. A. Entin. Plast. & Reconstruct. Surg. 15:290-312 (April) 1955 *[Baltimore].*

This report is based on experimental investigations and on clinical experiences. Redistribution of electrolytes was determined in the muscles of rats at different times after roller injury of hind legs. The rats showed a loss of potassium and a pronounced gain of sodium. These changes suggest cellular damage. Experimental study of the effect of hyaluronidase on roller injury supports the conclusion that, if it is used early and in sufficient doses, it will curtail edema and reduce the loss of tissue. The group of patients included in this study was selected from a series of cases of roller and wringer injuries, because each demonstrated a different type of avulsion injury with one or several associated injuries. The author saw most of the patients within a short time after injury. Surgical procedures and, in some, definitive reconstruction were begun on the average within four hours after the accident. Rapidity in closing wounds reduces infection and increases the chances of primary healing, both of which are essential to the functional restoration. In some patients injuries occurred in small towns and definitive treatment was not available or was not sought for days or even weeks. Such delays reduce the chances of optimal recovery of function and make the reconstructive procedures more difficult. The degloving and palmodorsal types of injury associated with the loss of part of a member are the more mutilating and reconstructive procedures are, consequently, more difficult and may require several operations. Good function always takes precedence over the cosmetic appearance. Palmar avulsions, even in the very young, are associated with severe injury to the soft tissues and muscles of the thenar and hypothenar eminences. Unless they are frankly ischemic, attempts to preserve partly avulsed palmar flaps should be made by suturing them into the normal anatomic position. The use of primary definitive reconstruction is attended by better chances of success even in patients with severe dorsal avulsion associated with tendon, bone, and joint injuries. Treatment should strive for preservation of all viable tissues, closure without tension, and earliest resumption of motion. Because of the complex nature of some of the injuries, immediate definitive reconstruction may not be possible. The initial treatment, however, must provide complete closure of all wounds without excessive tension in order to minimize stiffening. Unless specifically contraindicated, the placing of the hand in the position of function is imperative. It is important to obtain good primary healing and to start early motion in the hand, because long-standing open wounds, secondary infections, and prolonged immobilization can seriously impair function and interfere with definitive reconstruction. The initial closure of all wounds may entail simple resuturing of the avulsed portion of the skin, application of split-thickness skin graft, or shifting of neighboring skin. In massive loss of skin with exposure of bones and tendons, it may be necessary to apply flaps from distant areas in order to preserve denuded parts and permit future reconstructive operations. When it is possible to combine the initial and the definitive reconstruction, tissue is saved. It is essential to speed up rehabilitation by occupational therapy and by evoking in the patient an enthusiastic desire to regain complete function.

THERAPEUTICS

Studies in Penicillin Hypersensitivity: II. The Significance of Penicillin as a Contaminant. M. Coleman and B. B. Siegel. J. Allergy 26:253-261 (May) 1955 [St. Louis].

Itching of the palms, genitals, axillae, and soles of the feet developed in a 29-year-old nurse 15 minutes after swallowing a 200,000 unit tablet of penicillin. This was followed by itching of the throat and a generalized urticaria and angioedema. A subcutaneous injection of epinephrine relieved most of the symptoms within 30 minutes. One year later this penicillin-sensitive patient was given an intramuscular injection of 25 mg. of an aqueous suspension of testosterone mixed with a small amount of 1% procaine hydrochloride for the correction of menstrual irregularity. A severe allergic reaction with the previous symptoms and in addition with tightness in the chest, audible wheezing, vomiting, and severe lower abdominal pains followed by metrorrhagia was produced in this highly sensitive patient by the use of a supposedly clean, boiled syringe. Complete study by means of passive transfer and direct skin testing revealed negative reactions and no clinical responses to testosterone and procaine. However, when the sterilizer water in which the syringe had been boiled was found to contain penicillin antigen in appreciable amounts, it seemed likely that the contamination of the injectant with penicillin was responsible for the untoward reaction in this patient. Contamination of syringes and sterilizer water with penicillin presents a serious problem, as it is difficult to wash the syringe clear of penicillin and prolonged boiling does not completely inactivate the antigenic principle of the drug. It is hazardous to administer any type of injection to patients who are known to be markedly sensitive to penicillin unless it is certain that the syringes to be employed are not contaminated with penicillin. Allergic reactions in penicillin-sensitive patients, which are commonly attributed to nonantigenic drugs, may in fact be caused by penicillin as a syringe contaminant. The authors' case suggests the possibility that sensitization to penicillin may result from repeated injections of unrelated substances with syringes contaminated with penicillin. To reduce the likelihood of contaminating syringes and sterilizers with penicillin, it is imperative that all-glass syringes and needles be washed at least three times with running water after using. The syringe parts should then be separated before they are placed in the sterilizer. Sterilizers should be cleaned after use and the water in them should be changed frequently and completely. It would be advisable to reserve separate syringes and a separate sterilizer for use with penicillin.

Meticorten and 9 Alpha Fluorohydrocortisone in the Treatment of Allergic Disorders. C. E. Arbesman and R. J. Ehrenreich. *J. Allergy 26:189-200 (May) 1955 [St. Louis].*

Two synthetically prepared steroids, 9-alpha-fluorohydrocortisone and prednisone (Meticorten) were given therapeutic trials in patients with allergic disorders. Eight patients with severe asthma, seven of whom had been symptomatically controlled with cortisone or hydrocortisone, were treated with 2 to 12 mg. of 9-alpha-fluorohydrocortisone daily for 4 to 14 days. Although very effective for sodium retention and eosinophil-reduction response, 9-alpha-fluorohydrocortisone was of no value in the relief of asthmatic symptoms. Prednisone was given to 20 patients, 17 of whom had bronchial asthma, one dermatomyositis, one perennial allergic rhinitis, and one chronic urticaria and angioedema. Of the 17 asthmatic patients, 16 had been on maintenance therapy with either cortisone or hydrocortisone for long periods. Fifteen of these 16 patients obtained at least equally beneficial results from prednisone when 5 mg. of this drug was substituted for each 25 mg. of cortisone and 20 mg. of hydrocortisone. In one patient severe epigastric pain developed with 10 mg. of prednisone; he was switched back to hydrocortisone without difficulty or ill-effects and remained well. The 17th asthmatic patient had not previously had steroid therapy and obtained excellent relief with an initial daily dose of 20 mg. of prednisone for one week. He continued to improve on a maintenance dose of 10 to 15 mg. daily. The patient with dermatomyositis was more satisfactorily controlled by prednisone than by hydrocortisone. The patient with severe perennial allergic rhinitis and the one with giant urticaria and angioedema failed to respond to prednisone. Prednisone, despite no supplemental potassium or sodium restriction, did not affect these electrolytes in patients with the doses used by the authors. Prednisone did not affect the blood pressure or body weight. Prednisone is clinically four to five times as effective as cortisone and three to four times as effective as hydrocortisone, milligram for milligram. The long-term effect of this new steroid must yet be determined. The usual precautions and contraindications of the other steroids should be observed. Prednisone, like the other steroids, is not a substitute for specific management of the allergic or asthmatic patient.

Recent Viewpoints on the Pharmacology of Narcotine. H. Konzett. Wien. klin. Wchnschr. 67:306-309 (May 6) 1955 (In German) [Vienna, Austria].

Narcotine, a benzoylisoquinoline derivative and one of the secondary alkaloids of opium, was given in doses of 0.5 to 1 mg. per kilogram of body weight to cats in which attacks of cough were produced by mechanical stimulation of the mucosa of the trachea. The cough reflex was controlled surprisingly well. This effect of narcotine was similar to that obtained with codeine. The lungs of the anesthetized cats were then subjected to rhythmical inspiration with the aid of Starling's respiration pump. The amount of air which with a constant maximum inflation pressure could no longer be taken up by the lung was directed to a volume-recording instrument, by which it was quantitatively recorded during the inspiration phase. This method permits quantitative measurements of bronchoconstrictor as well as of bronchodilator effects. With the use of this technique narcotine proved to exert a moderate bronchodilator effect when doses of 2 to 4 mg. per kilogram of body weight were given. Narcotine caused slight lowering of blood pressure of short duration. This effect depended primarily on vascular dilatation. Narcotine also exerted a weak spasmolytic effect on isolated strips of small intestine and colon obtained from rabbits and guinea pigs. It also exerted a spasmolytic effect on the stomach and intestine of the intact animals. Experiments on dogs that were given narcotine daily for 13 weeks showed that the cough-inhibiting effect remained the same despite the prolonged therapy; drug habit, therefore, did not develop. Cough was induced by inhalation of citric acid aerosol in healthy persons and in patients with asthma who then were given narcotine and codeine in tablets. Narcotine in doses of 5 to 15 mg. exerted a definite cough-inhibiting effect that was stronger than that obtained with larger doses (30 mg.) of codeine. Although further therapeutic trials in man are required for definite evaluation, the conformity in the results obtained in human cough and in experimentally produced cough reflex in animals is noteworthy.

A Clinical Evaluation of Elorine Sulfate. I. R. Schwartz, E. Lehman, J. M. Seibel and others. Am. J. Gastroenterol. 23:461-468 (May) 1955 [New York].

Elorine, a quaternary ammonium compound (1-cyclohexyl-1-phenyl-3-pyrrolidino-1-propanol methsulfate), was given to 167 patients with hypercholinergic gastrointestinal manifestations, 144 of whom were followed up long enough for proper evaluation. Of these 144 patients, 104 had peptic ulcer and 40 had miscellaneous hypercholinergic disorders such as dumping syndrome, functional diarrhea, irritable colon, ulcerative colitis, duodenitis, and psychoneurosis with hypercholinergic gastrointestinal manifestations. Seventy-seven of the 104 patients with ulcers were successfully treated as shown by prompt and sustained relief of symptoms. These patients received 50 mg. of the drug four times a day, and in the more severe cases 75 to 100 mg. was given four times a day. The authors believe that more patients could have been helped by the use of doses larger than the initially recommended 50 mg. four times a day. Twenty-two of the patients in the miscellaneous hypercholinergic group were successfully treated, although the number of patients in each category was not statistically significant. Gastric secretion studies revealed a distinct response in diminution of volume of secretion and of free acid only when the intragastrically installed dose of the drug was 100 mg. or more. Undesirable side-effects were surprisingly moderate in number and severity. Only five patients could not tolerate the drug because of toxic effects. Doses of 75 mg. to 100 mg. four times a day are necessary for therapeutic purposes, but the dose of 50 mg. four times a day can be used as a maintenance dose. Elorine, and Co-Elorine (25 mg. of Elorine sulfate combined with 8 mg. of amobarbital) with its added sedative effect, are valuable additions to the treatment of diseases manifested by hypercholinergic symptoms.

Ultrasonic Therapy with Special Reference to Rheumatic Diseases. F. Friedland. Am. J. Phys. Med. 34:379-385 (April) 1955 [Baltimore].

Compared with the more commonly accepted therapeutic agents such as infra-red and short-wave diathermy, ultrasound seems to have a therapeutic efficacy equal to that of the thermal energies and in some conditions slightly better. In constitutional diseases such as rheumatoid arthritis ultrasound is not curative, but it is a worthwhile adjunct to the total therapeutic regimen. It allows of obtaining improvement in patients resistant to other forms of therapy. It is convenient in application, requiring treatment of from 4 to 10 minutes as compared with 20 to 30 minutes for all other forms of thermal energy. In the treatment of subdeltoid bursitis and rheumatoid spondylitis, ultrasound has the definite advantage over x-ray therapy that it can be used repeatedly for the treatment of unavoidable recurrences. Ultrasound in the recommended doses is believed to be safe. Thus the author prescribes this therapy as first choice in Marie-Strümpell spondylitis, sciatic neuralgia, and subdeltoid bursitis except when certain contraindications exclude its use, e. g., lack of cooperation on the part of a patient who cannot be depended on to report increased pain or burning, the most important safeguard against overdosage and tissue damage. The author also advises against the use of ultrasound before, during, or after the period of x-ray therapy because of the possible summation effect of these two radiant energies.

PATHOLOGY

Diagnostic Study of Serous Effusions with Emphasis on Some Unusual Findings. M. L. Perou and M. S. Littman. Am. J. Clin. Path. 25:467-479 (May) 1955 [Baltimore].

Specimens of serous effusions were obtained from the pericardial, pleural, or peritoneal cavities of 50 patients, both during life and at autopsy. There were 10 control patients with no malignant tumor, 27 patients with carcinoma, 10 with lymphoid tumors, 2 with mesotheliomas, and one with reticuloendotheliosis (Letterer-Siwe's disease). The following practical conclusions can be drawn from the study. 1. Undifferentiated tumor cells cannot be of value in locating the primary site of these cells, whereas well-differentiated tumor cells afford great diagnostic help. 2. Organoid arrangements are pathognomonic of cancer and are better seen in hematoxylin-stained and eosin-stained sections of sediments. Liebow stated: "Occasionally strips of mesothelial cells may curl upon themselves to present a misleading acinar aspect." 3. Carcinoma cells can often be distinguished from sarcoma cells. 4. Certain types of metastasizing carcinoma can be ruled out or confirmed by cytological examinations of serous effusion alone. 5. Certain types of sarcoma such as reticulum cell sarcoma, Hodgkin's sarcoma, and, to a lesser degree, lymphosarcoma can be recognized in serous effusions. 6. Besides mesothelial, inflammatory, and carcinoma cells one may also find sarcoma, reticular cells, or myeloid cells in serous effusions. Too often the cytologist looks only for "carcinoma cells," and the interpretation of the other types of cells present is neglected. 7. Mesotheliomas may be suspected from cytological examination of appropriate serous effusions. The presence of a syncytial pattern or of sarcoma-like cells and carcinoma-like cells side by side seems characteristic although not pathognomonic, since other types of tumor such as anaplastic carcinoma or leiomyosarcoma may give similar findings. The tubular or papillary type of mesothelioma is often indistinguishable from carcinoma of the bronchus, breast, or ovary.

BOOK REVIEWS

Forceps Deliveries. By Edward H. Dennen, M.D., F.A.C.S., Professor of Obstetrics and Gynecology, New York Polyclinic Medical School and Hospital, New York. Obstetrics & Gynecology: A Series of Monographs, edited by Claude E. Heaton, M.D., Associate Professor of Obstetrics and Gynecology, New York University College of Medicine, New York. Cloth. $6.50. Pp. 228, with 88 illustrations. F. A. Davis Company, 1914-16 Cherry St., Philadelphia 3, 1955.

This is an excellent summary of modern thinking concerning the most frequent, the most useful, and the most abused operative procedure in obstetrics. In the first two chapters, the author discusses the indications for forceps delivery, the conditions necessary for the safe delivery of the baby and the prevention of trauma to the mother, the classification of forceps operations, correct diagnosis, and proper application of the instrument. Most of the book is devoted to the use of forceps in the delivery of the head in a posterior position or arrested in the transverse, as well as the use of special instruments for special situations. The final chapters are devoted to the Keilland, the Barton, and the Piper forceps and their use under special conditions and indications. The text is illustrated throughout by excellent line drawings that picture the proper application of the various instruments in situations most suited for their use. The author is undoubtedly a superb craftsman who has learned to use the best instrument to meet his special needs. In his introduction he says that "the ultimate object of this book is to show that there is a choice of instrument in delivery with forceps, depending on existing conditions; that one should choose the type of forceps that suits the case rather than try to make all cases fit one type of forceps." Unfortunately, such skilled technicians are a vanishing lot and most obstetricians today are fortunate if they develop real dexterity in the use of one type. Furthermore, many patients in whom a difficult midforceps delivery would have been performed in the past are now delivered by cesarean section and this trend will continue. If forceps delivery is undertaken only when the head is well engaged in the pelvis, there is little use for axis-traction devices to which the author is attached, for the skilled accoucheur can obtain a desirable mechanism of delivery without their use. A favorable delivery mechanism can be carried out easier and all manipulations simplified if an episiotomy precedes the application of the blades. This excellent monograph is recommended for the specialist and the casual obstetrician, but it must be remembered that it is the man behind the forceps and not the instrument that is all important.

The Royal Society of Medicine: The Realization of an Ideal (1805-1955). Written at the request of president and council by Maurice Davidson, M.A., D.M., F.R.C.P. Cloth. 21s. Pp. 201, with 29 illustrations. The Royal Society of Medicine, 1 Wimpole St., London, W.1, England, 1955.

Not often does one find such a thoroughbred book as this one, which was written to commemorate the 150th anniversary of the Royal Society of Medicine. The esteem in which the society is held in British medicine is exemplified in the recognition given it by the sovereigns of Britain since the time of His Majesty King William IV who granted it a charter in 1834 and who thereby declared himself "and his successors if they shall think fit" the Patron of the Society. Each of the successors of William IV has thought fit to be its patron. On what must have been a highly impressive occasion on May 21, 1912, King George V and Queen Mary attended the opening ceremony of the new home of the society at no. 1 Wimpole Street. In November, 1922, the president of the society announced to the council that His Royal Highness the Prince of Wales, having accepted an honorary fellowship, had been unanimously elected. The chapters on the proceedings of the society and especially that on the library, which has been described as the finest medical library in Europe, if not in the Western Hemisphere, will evoke in the reader deep contemplation and nostalgia.

A unique chapter in a book of this sort called the "Presidential Chair" provides a brief account, with illustrations, of those who have occupied the presidential chair beginning with Sir William Selby Church, B.T., K.C.B., M.D., to the present occupant, Sir William Gilliatt, K.C.V.O., M.S., now Surgeon-Gynecologist to Her Majesty Queen Elizabeth II. There should be few who will fail to regard the last chapter on the future as required reading for all members of our profession. Those who are content with the present trend in medicine here and abroad will pause to reflect. Those who are deeply concerned will take fresh courage, despite the risk of being called reactionaries, in maintaining the traditions of the past that elevated the physician in the esteem and affection of the public—a position many have failed to treasure, and, once lost, will in this day be difficult to recapture. Some time ago there were those who were deeply concerned that medicine must choose whether to follow the path of freedom and solid accomplishment or be tempted to turn down a road that would lead to its seduction. It appears to have chosen the latter and consequently finds itself in a maelstrom of corrosive forces that are sapping its strength and dignity.

Those reactionaries that predicted what was to come and those, not familiar with the old road and yet troubled with the new, will derive inspiration and fresh courage from this account of the development of the Royal Society of Medicine. In 1905, the centenary year of the Royal Medical and Chirurgical Society of London, the Chronicles of the Society from 1805 to 1905 were published. Now that the Royal Society of Medicine has reached its jubilee, this chronicle of the events of the society during the last 50 years links the present with the past. The society may well take pride in the constellation of stars among the great clinicians on her roster of bygone days. Their stature is well portrayed in this book, which is in no sense a mere historical account of a medical fellowship. It is published in excellent taste and the illustrations, especially the frontispiece in colors from the drawing by Patrick Hall, are a delight to examine.

Antenatal and Postnatal Care. By Francis J. Browne, M.D., D.Sc., F.R.C.S., Consulting Obstetric Surgeon, University College Hospital, London, and J. C. McClure Browne, B.Sc., M.B., F.R.C.S., Professor of Obstetrics and Gynæcology, University of London, London. Eighth edition. Cloth. $8. Pp. 672, with 94 illustrations. Little, Brown and Company, 34 Beacon St., Boston; J. & A. Churchill Ltd., 104 Gloucester Pl., London W.1, England, 1955.

The introductory chapter gives the development of antenatal care. The presentation of data reveals the slow but gradual progress of the evaluation of better obstetric care, with the lowering of maternal mortality. Credit is given to various countries for their contributions in this direction. The sequence of chapters begins with the diagnosis of pregnancy. Subsequently, emphasis is given to the medical examination. Evaluations of special points are made in regard to diet, hygiene, general care, travel, bathing, care of the breasts, articles of clothing, and smoking. One chapter by Grantly Dick Read presents the emotional aspect of pregnancy and parturition. Three chapters are devoted to hemorrhage. The conditions in the first of these are abortion, tubal gestation, fibroid polyps, cervicites, varicosities, and carcinoma. The second chapter on hemorrhage deals with hydatiform mole. The third has to do with habitual and recurrent abortion. Thirty pages are devoted to hemorrhage of late pregnancy, primarily placenta previa. A second chapter on hemorrhage of late pregnancy discusses abruption of placenta.

The nature and manner of presentation implies authority, skill, and competence of the authors. Their knowledge of the literature of obstetrics commands respect. Much of the discussion involves biology, heredity factors, sex, Mendelian characteristics, and other useful information. The classification and number of medical complications, such as anemia, chorea, polyneuritis, myasthenia gravis, and syringomyelia, are listed separately. The methods for diagnosis are advanced logically. The recommendations for treatment are consistent and current.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

The section on venereal and related diseases gives appropriate coverage to syphilis and gonorrhea. Moderate space is given to trichomonas infection and mycoses. The therapies of these two latter conditions derive more from Europe than from the Western Hemisphere. The section on radiology and obstetrics is profusely documented by pictures and illustrations, but only 20 pages are given to postnatal care. The book makes little mention of care on parturition. The book is valuable for the proper attitude with which the material is presented and the broad coverage and the healthy discussion of the normal and abnormal conditions in the prenatal period.

Gynæcology. By Douglas H. MacLeod, M.S., F.R.C.P., F.R.C.S., Gynæcological Surgeon, St. Mary's Hospital, and Charles D. Read, M.B., F.R.C.S., F.R.A.C.S., Director, Institute of Obstetrics and Gynæcology, British Postgraduate Medical Federation, University of London, London. [Formerly Eden and Lockyer's Gynæcology.] *Section on Anatomy* by James Snyder, M.D., F.R.C.S. *Section on Physiology* and Endocrinology by Russell Fraser, M.D., F.R.C.P. *Fifth edition.* Cloth. $16. Pp. 864, with 551 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6; J. & A. Churchill, Ltd., 104 Gloucester Pl., Portman Sq., London, W.1, England, 1955.

The first edition of this book, which was popular many years ago, was written by Eden and Lockyer and published in 1916. These authors prepared revised editions in 1920 and 1928. The fourth edition was revised by Whitehouse in 1935 and now, after 20 years, the fifth edition appears. Because the present authors believe that many data that were in the edition of 20 years ago are still accepted as orthodox gynecologic opinion and practice, they have made few alterations in the sections dealing with the clinical aspects of infection, ectopic pregnancy, simple uterine tumors, and gynecologic diagnosis. They have made great changes in the chapters on endocrinology, antibiotics and chemotherapy, blood transfusions, early diagnosis of cancer, infertility, and pathology. Special chapters were written by James Snyder on anatomy, Russell Fraser on physiology and endocrinology, and H. Hulbert on radiotherapy. The authors say the space devoted to operative gynecology is limited because the field cannot be covered properly except in a special textbook. In discussing the complete exenteration operation, Brunschwig's paper and statistics of 1949 have been quoted even though he has written several articles since then. It is unfortunate that few of the references quoted in the section on guides to further reading are to recent articles. Those quoted for diverticulitis are of 1907, 1916, 1917, 1925, 1926, and 1930. The reference for urethral diverticula is of 1890. In spite of this minor criticism, the book is outstanding. It is ably written by two of the foremost gynecologists in the world. There is an enormous amount of useful information about gynecology. The advice given about therapy is excellent and in accord with that recommended in the United States as well as Great Britain. The illustrations are numerous and well reproduced. The authors are to be commended for having brought this great book up to date and for having improved it immeasurably.

The Halogenated Aliphatic, Olefinic, Cyclic, Aromatic, and Aliphatic-Aromatic Hydrocarbons Including the Halogenated Insecticides: Their Toxicity and Potential Dangers. By W. F. von Oettingen, M.D., Ph.D., United States Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Institute of Arthritis and Metabolic Diseases. Public Health Service publication no. 414. Cloth. $2.50. Pp. 430, with illustrations. Superintendent of Documents, Government Printing Office, Washington 25, D.C., 1955.

This book is a review of the accumulated knowledge on the mechanism and action of the halogenated hydrocarbons. Carbon tetrachloride, DDT, Freon, methyl bromide, and other less familiar chemicals used as insecticides, solvents, fumigants, and refrigerants are described. The chemistry, analytical procedure, potential uses, investigative toxicology, clinical toxicology, and the prophylaxis and treatment of poisoning from them are discussed. Since many of these compounds are finding increasing use in industry and our daily life, this synopsis of their toxicology is intended to reduce the incidences and facilitate the diagnosis and treatment of poisoning and stimulate research on many unanswered problems concerning their activity. As a reference guide to help further knowledge on newer poisons used in industry and in agriculture, this book can be highly recommended.

Origins of Resistance to Toxic Agents: Proceedings of the Symposium Held in Washington, D.C., March 25-27, 1954. Edited by M. G. Sevag, Department of Microbiology, School of Medicine, University of Pennsylvania, Philadelphia, Roger D. Reid, Head, Microbiology Branch, Office of Naval Research, Department of the Navy, Washington, D. C., and Orr E. Reynolds, Director, Biological Sciences Division, Office of Naval Research, Department of the Navy. This symposium, organized by editors, was held under joint auspices of Office of Naval Research and University of Pennsylvania. Cloth. $12. Pp. 471, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1955.

The discovery of sulfonamides and various antibiotics has been considered by some as having introduced the golden age in therapeutics. This was predicated on the optimistic belief that infectious diseases were about to become a thing of the past, but disappointment and concern among physicians about the increasing resistance to antibiotic therapy now prevails. This book offers a serious warning against any false sense of security regarding the control of infections with this group of compounds. Toxic reactions involving systemic and metabolic derangements, dermatological manifestations, and hypersensitivity are an added and rather discouraging development. These and other challenging problems prompted the organization of this symposium, which brought together various specialists, principally for discovering the common element in an apparent diversity of ideas. The book is divided into five parts. The first is devoted to resistance of microbicides to drugs, its origin and mechanism. The second part explores resistance to herbicides and insecticides. Insect resistance to DDT has been analyzed intensively as to the source, distribution, and causes for resistance and its difference from other insecticides. The origin of tolerance and addiction to drugs and the special problem of alcoholism is discussed in part 3. The biochemical and physiological disturbances associated with addiction to drugs, as well as psychological and sociologic factors, are reviewed. Part 4 examines resistance factors common to infectious agents and cancer cells. It discusses transformations to resistance and dependence of leukemic cells, the nature of tumor immunity, and factors in resistance to infectious diseases. The physiological, chemical, and genetic factors involved in resistance are reviewed in part 5. This book is an authoritative report on a complex subject, the full implications of which are still undetermined.

The Management of Obstetric Difficulties. By Paul Titus. Revised by J. Robert Willson, M.D., M.S., Professor of Obstetrics and Gynecology, Temple University School of Medicine. Philadelphia. Fifth edition. Cloth. $12.50. Pp. 737, with 349 illustrations, C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1955.

Willson has reduced the size of the book by more than 300 pages. The large section on infertility has been retained, although it has been drastically cut. It is questionable whether infertility comes under the heading of obstetric difficulties. Extensive changes have been made throughout the book. Outmoded, unproved, and many controversial procedures have been omitted, but the book remains essentially what Titus intended it to be, hence it is not in competition with the conventional textbooks on obstetrics. Willson emphasizes that local infiltration anesthesia is simple, safe, and effective for providing pain relief for the mother without affecting the infant, yet at Temple University Hospital over 12,000 spinal anesthetics have been administered for delivery and no woman has died or been permanently injured as a result of the procedure. Willson says that extensive hormone therapy is not often necessary during pregnancy, but in some women the endocrines may be helpful. He questions the beneficial effects of estrogen or progesterone in abortion, and he says that neither estrogen nor the male hormone needs to be given to inhibit engorgement of the breasts after delivery. The section on the newborn infant was written by Victor C. Vaughan III. The book is well written and contains much valuable information and advice. The latter is practical and conservative. The illustrations are numerous, clear, and instructive, but the colored frontispiece, which was drawn 20 years ago and shows the Friedman-Lapham modification of the Aschheim-Zondek test, should be omitted from the next edition. This book has been popular, and the improvements made by Willson will undoubtedly increase its popularity. The publishers also deserve praise for having done their part well.

Progress in Allergy. IV. Edited by Paul Kallós. Contributors: M. G. Bohrod, et al. Cloth. $20. Pp. 520, with 149 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6, 1955.

In his introduction to this fourth volume Kallós gives an excellent review of the current progress in allergy in addition to covering facts that are well known. The student of allergy will find this introduction together with the large bibliography a valuable source of information for laboratory or clinical use. Each contributor is outstanding in his particular field. The manner in which the various facets of clinical and basic scientific concepts of allergy has been presented is excellent.

Bohrod's contribution on histology of allergic and related lesions is a comprehensive review of the histopathology of allergic disorders. In it he attempts to correlate the lesions described by the clinician and immunologist as allergic with the pathological findings. This article is one of the best discussions available on this subject. Mayer's chapter, entitled "Group-Sensitization to Compounds of Quinone Structure and Its Biochemical Basis," is well documented. Those interested in this subject will be well rewarded by reading it. Delayed hypersensitivities are discussed by Raffel. The most important recent advances in allergy concern the adrenal steroids. Three of the contributors have dealt with different phases of this problem. Experimental asthma is ably discussed by the Noelpps, and Maunsell has a chapter on respiratory allergy to fungus spores that includes the classification, identification, diagnosis, testing, therapy, and culturing of molds. All in all this book is a worthwhile compilation.

Minor Surgery. By John E. Sutton, M.D., F.A.C.S., Assistant Clinical professor of Surgery, Cornell University Medical College, New York. Handbooks for General Practitioner. Cloth. $7. Pp. 334, with 102 illustrations. Landsberger Medical Books, Inc.; distributed by Blakiston division of McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36; 95 Farringdon St., London, E.C.4, England, 1955.

The author was confronted by the eternal problem of differentiating between major and minor surgery. He considers minor procedures those concerned with simple uncomplicated conditions that do not endanger the patient's life or future health. This excellent book is written in a succinct style with a lack of redundancy. Chapter 6 gives an outstanding discussion of the problems of "antimicrobials," an aptly applied term. Intelligent and effective use of these agents depends on ascertaining the clinical diagnosis and the identity of the organism responsible for the infection. The advocacy of general anesthesia in the office or home is questionable to those who practice in areas well supplied with hospital facilities, but we must bear in mind our neighbors who do not have such advantages. A greater number of illustrations would enhance the value of this work. This book should be a valuable asset to the general practitioner and can be recommended to anyone interested in minor surgery.

The Pharmacological Basis of Therapeutics: A Textbook of Pharmacology, Toxicology, and Therapeutics for Physicians and Medical Students. By Louis S. Goodman, M.A., M.D., Professor of Pharmacology, University of Utah College of Medicine, Salt Lake City, and Alfred Gilman, Ph.D., Professor of Pharmacology, College of Physicians and Surgeons, Columbia University, New York. Second edition. Cloth. $17.50. Pp. 1831, with 89 illustrations. The Macmillan Company, 60 Fifth Ave., New York 11, 1955.

This book needs little introduction for it has maintained its popularity as a pharmacology textbook despite the fact that 14 years have elapsed since the first edition was published. The present edition is much larger than its predecessor, as might be expected from the many advances in clinical pharmacology during the past decade. Emphasis is placed on the evaluation of new drugs and particularly on the necessity for cautious acceptance of preliminary therapeutic claims. As in the first edition, much space is devoted to discussing the relationship of chemical structure and pharmacological activity. As with any book of this type some portions are already out-of-date, but this does not detract from the essential value of this book in acquainting the physician and medical student with the newer drugs as well as with the basic principles necessary for the rational use of drugs in clinical practice.

Atlas der Haut- und Geschlechtskrankheiten. Von Dr. Walter Frieboes und Dr. Walther Schönfeld, o. Ö Professor und Vorstand der Universitätsklinik und Poliklinik für Haut- und Geschlechtskrankheiten Heidelberg. Second edition. Cloth. 118 marks; $28.10. Pp. 292, with 476 illustrations. Georg Thieme, Herdweg 63, (14a) Stuttgart, Germany; (agents in U. S. A. and Canada, Intercontinental Medical Book Corporation, 381 Fourth Ave., New York 16), 1955.

This volume admirably fulfills the function of an atlas. It contains 470 excellently selected illustrations, all but a few of which are true color reproductions of the commonly encountered diseases and many of the uncommon. They are contained in one volume and arranged in a logical manner. Each page contains three or four close-up illustrations showing the essential character of the lesions with but a minimum of explanatory text in German. The volume, of excellent stock, is well indexed. The outstanding features, however, are the excellence of the colored illustrations and the large number of them. It is unfortunate that the high cost of production makes it impractical to publish a book of this kind in the United States.

Physiology and Anatomy with Practical Applications. By Esther M. Greisheimer, M.A., Ph.D., M.D., Professor of Physiology, Temple University School of Medicine, Philadelphia. With the assistance of Ann A. Miraldo, R.N., B.S., Science Instructor, Temple University School of Nursing. Seventh edition. Cloth. $5. Pp. 868, with 478 illustrations. J. B. Lippincott Company, East Washington Sq., Philadelphia 5; Pitman Medical Publishing Company, 39-41 Parker St., Kingsway, London, W.C.2, England, 1955.

The present edition of this popular book for nurses continues to present the essentials of anatomy and physiology in a lucid, easily understood manner. Much material has been rewritten, revised, and reset. Among other changes the section on the nervous system has been condensed into two chapters, one dealing with the peripheral (including the autonomic) and the other with the central nervous system. The chapter dealing with the endocrine system has been completely recast. The addition of new illustrations serves to facilitate assimilation of text material. Situations, with relevant questions, follow each chapter. Nursing students should find this book a real aid.

Clinical Endocrinology for Practioners and Students. By Laurence Martin, M.D., F.R.C.P., Physician to Addenbrooke's Hospital, Cambridge, and Martin Hynes, M.D., M.R.C.P., Clinical Pathologist to Royal Northern Group of Hospitals, London. Foreword by Sir Lionel Whitby, C.V.O. M.C., M.D., Regius Professor of Physic, University of Cambridge, Cambridge. Second edition. Cloth. $5.50. Pp. 253, with 39 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6; J. & A. Churchill, Ltd., 104 Gloucester Pl., Portman Sq., London, W.1., England, 1954.

This book is divided into 11 chapters on the pituitary; Fröhlich's syndrome and obesity; the pineal body; the thyroid gland; the parathyroid glands; the thymus; the adrenal glands; the testes; the ovary; the breast; and hormone implantation. It is written in excellent English with few excess words. It contains an astonishing amount of useful information. Most American endocrinologists will not take issue with the opinions expressed. It should be a useful addition to the library of those practitioners whose interest is not primarily in the field of endocrinology. Because of its brevity, the information sought can usually be quickly obtained.

Differential Diagnosis of Internal Diseases: Clinical Analysis and Synthesis of Symptoms and Signs on Pathophysiologic Basis. By Julius Bauer, M.D., F.A.C.P., Clinical Professor of Medicine, College of Medical Evangelists, Los Angeles. Second edition. Cloth. $15. Pp. 987, with 65 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W. C. 1, England, 1955.

This edition includes some of the newer approaches and a great deal of philosophical thinking regarding the interpretation of symptoms. The author deplores the indiscriminate use of such tests as angiography of the heart or brain, aortography, and biopsies of the liver and kidney. This text is well written and the print and type of paper are excellent. The bibliography covers the most important references to the subjects discussed. This book should make an excellent addition to the library of anyone who is interested in the interpretation of symptoms and signs.

QUERIES AND MINOR NOTES

ANTIBIOTICS USED LOCALLY

To the Editor:—*Is the application of Aureomycin powder to wounds an approved procedure? Formerly the sulfonamides were so used, but it is believed this method was discarded as ineffectual and only the systemic administration of the sulfonamide drugs favored.* M.D., *California.*

Answer.—There is some divergence of opinion as to whether Aureomycin powder should be applied topically to wounds. This difference of thought extends to the local application of other antibiotic agents. However, most authorities do not recommend the local application of any antibacterial agent to fresh wounds, including those of the peritoneal surfaces. Their opinion has been formed as the result of several observations. Topically applied agents usually have a short period of bacteriostasis due to their absorption. They may be locally irritating, because of either their pH or chemical structure. They may also cause a state of hypersensitivity to the agents used, thereby depriving patients of the future benefits of these agents. In addition, there is tissue culture evidence that some of the antibiotics, including Aureomycin, inhibit the proliferation of epithelial cells in relatively low concentrations. The local application of antibiotic agents, particularly over long periods of time, favors the acquisition of resistance by bacteria to the agents used. This is causing the development of resistant strains of bacteria in our environment that are beginning to produce infections not influenced by any of the available agents. It is, therefore, recommended that antibiotics, which are safe and effective for systemic use, not be used topically. If the use of an antibacterial agent is deemed necessary, one of the agents not likely to be used parenterally, such as Neomycin, Polymyxin, or Bacitracin, should be chosen.

VARICOSE VEINS DURING PREGNANCY

To the Editor:—*A 30-year-old white woman is 24 weeks pregnant with her fourth pregnancy. She had varicosities of the right thigh and vulva with the last pregnancy, with almost complete disappearance of these postpartum. Now there are moderately severe varicosities of the right thigh and to a lesser extent of the lower leg. Those of the right vulva and buttock are painful due to distention after standing. Please advise, particularly on the advisability of using an elastic stocking. Benjamin E. Morgan, M.D., Wilson, N. C.*

Answer.—Women who have varicose veins of the legs and thighs should keep their legs on a chair or a stool while they are sitting. This relieves the distended veins of the extra load of blood they must carry when the feet are lowered in the usual position. Care must be exercised not to injure varicose veins because they may bleed or become infected. When the veins are unusually large a rubber stocking or elastic bandage must be worn. The stocking or bandage should be long enough to extend above the highest visible varicose vein and should be put on the leg in the morning before the wearer arises. In the case cited, a rubber stocking will compress the veins in the lower leg but not the veins in the upper thigh, vulva, and buttocks. A tight panty girdle can relieve painful varicosities in the vulva and buttocks. In many cases the veins may be obliterated by injection treatment during pregnancy. The results of this type of treatment are good and the dangers slight, if any. Special care must be taken during labor to prevent lacerations of the varicose veins in the vulva.

APLASTIC ANEMIA FOLLOWING DRUG THERAPY

To the Editor:—*A woman, 50 years of age, developed aplastic anemia following treatment with Butazolidin. When the patient was first seen, Dec. 1, 1954, she was acutely ill, with 1,670,000 red blood cells per cubic millimeter and a hemoglobin level of 5.05%. No bone marrow was found on sternal puncture, and there were no platelets. The patient is at the hospital receiving daily treatment of 25 units of corticotropin (ACTH), 5% glucose in water, and transfusions of whole blood. On December 27, 1954, there were 3,570,000 red blood cells per cubic millimeter; the hemoglobin level was 11.15; and there were no platelets. The patient has no complaints and feels as well as ever. What is the prognosis, and can anything be added to the present treatment; also, need corticotropin be given daily, as her veins are becoming sclerosed? Melville V. Popelar, M.D., Cincinnati.*

Answer.—The prognosis of aplastic anemia due to marrow pancytopenia associated with drug therapy is always grave. Such cases have been reported to follow the administration of Butazolidin. In general partial or complete recovery from well-established drug-induced refractory anemia is unusual but possible after a period of weeks or months. It has not been convincingly shown to be accelerated by any method of treatment. As spontaneous recovery may occur, the opportunity for it to develop is obviously increased by prolonging the survival of the individual. Regular transfusions of whole blood or of packed red blood cells in order to maintain the hemoglobin level in the vicinity of 10 gm. per 100 cc. are the most useful therapeutic measure. In this patient orally administered cortisone should be substituted at once for intravenously given corticotropin so that the patient may leave the hospital if conditions for home convalescent care under close professional supervision are satisfactory. Corticotropin and cortisone are probably equally effective in preventing purpuric bleeding by decreasing vascular fragility and sometimes in addition by elevating the platelet count. There is little evidence for a beneficial effect of either on red or white blood cell production in such patients. In rare instances of hypoplasia of erythropoiesis, especially in children, cortisone has increased the erythroid cellularity of the bone marrow. The anemia has then become responsive to vitamin B_{12}. Splenectomy is probably contraindicated because of absence of platelets and marrow megakaryocytes unless red blood cell survival is short.

The patient probably also has leukopenia with few granulocytes. As long as a minimal number of adult polymorphonuclear cells are in evidence, leukopenia does not often lead to infection. Chemotherapy, such as for an infection of the oral cavity, should be reserved for a clinical indication and not used prophylactically. On an empirical basis, to guarantee the adequacy of nutritional factors for erythropoiesis, the patient should receive a nutritious diet and in addition 30 mcg. of vitamin B_{12} every two weeks by injection as well as 1 to 5 mg. of folic acid daily by mouth. Based largely on vague clinical impressions, the patient might be given in addition daily 1 unit of Liver Extract or Liver Solution U. S. P. daily by mouth if these crude liver preparations are well tolerated.

TRACHEOTOMY TUBE

To the Editor:—*What effect would a few drops of 2% bicarbonate of soda have on mucus that plugs up a size 1 tracheotomy tube in situ? What is the chemical reaction? Anchise A. Cirillo, M.D., Jamaica, N. Y.*

Answer.—Two per cent sodium bicarbonate of soda has a very mild detergent reaction on mucus. Its use would be somewhat beneficial in cleaning a tracheotomy tube. A few drops instilled into the tracheotomy tube in situ from time to time is practiced in many institutions.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

MENTAL DISORDERS AND THYROID EXTRACT

To the Editor:—*1. What is the rationale for the treatment of mental disorders, other than those associated with severe hypothyroidism, with very large doses of thyroid extract? 2. Is there any danger in the daily intake of 5 to 20 grains (0.3 to 1.2 gm.) of thyroid extract for months or years?*

M.D., Illinois.

Answer.—1. For patients who have mental disorders but who do not have definite hypothyroidism, there probably is no real rationale for the use of thyroid extract. Although there have been reports on the use of large doses of thyroid extract in the treatment of mental disorders in the absence of hypothyroidism, such medication has not been commonly used. Danziger and Kindwall in 1948 suggested that mental disorders are related to depression of cerebral metabolism. They also suggested that the ingestion of thyroid extract would increase the cerebral metabolism. 2. There is danger in the daily intake of 5 to 20 grains of thyroid extract. In general, a euthyroid patient can tolerate larger doses than one who has myxedema, but the tolerance may vary widely in both groups of patients. For a majority of patients with myxedema, the disease will be well controlled with a dose of thyroid extract (U. S. P.) ranging somewhere between 1 and 2½ grains (0.065 to 0.10 gm.) daily. The patient who has a normal or lowered basal metabolic rate but without evidence of myxedema may tolerate twice this amount or more. A daily dose of 20 grains of thyroid extract (U. S. P.) would, however, be very likely to produce symptoms of hyperthyroidism in members of either group.

THROMBOCYTOPENIA IN INFANT

To the Editor:—*A newborn infant developed thrombocytopenia on first day of life. He was a first-born child and had bleeding from the intestines and genitourinary tract into skin and into the cerebrospinal fluid. With supportive therapy, he recovered completely. Other causes for bleeding were ruled out, and the platelet count was 30,000 per cubic millimeter. The parents were free from any manifestations of disease. Harrington has shown that such cases are apparently due to the passage of platelet agglutinins from mother to child; the parents wonder what likelihood there is that subsequent children may have similar trouble.* *M.D., Ohio.*

Answer.—There are two types of thrombocytopenia in the newborn infant. In the first, the mother shows thrombocytopenia purpura due to an acute platelet agglutinin that is then transmitted from the mother to the infant. In the second type, the mother may develop antibodies against the infant's platelets which then enter the infant's circulation, causing thrombocytopenia similar to the mechanism existing in hemolytic anemia of the newborn infant. The frequent thrombocytopenia in hemolytic anemia of the newborn infant is probably also caused by the same mechanism. Apparently, the case in question belongs to the second category. Although no reports discussing this problem on a larger scale are yet available, it is known that frequently thrombocytopenia may occur in several infants in the same family.

POLIOMYELITIS

To the Editor:—*1. What effect would the simultaneous administration of antipoliomyelitis gamma globulin have on the effective stimulation of antibody response elicited by the Salk vaccine? 2. At the age of 2½ years a patient had polioencephalitis. She now is 4 years old. Could it be possible that she has a natural immunity to poliomyelitis and does not need the Salk shots?* *M.D., New York, and M.D., Ohio.*

Answer.—1. None. 2. If the diagnosis of polioencephalitis was correct, then the patient is immune to the type of virus that caused the attack. There are three types of poliomyelitis virus, and the patient may not be immune to the other two types. The only way to determine this would be to do neutralization tests for all three types of virus with serum collected from the patient.

CASTRATION

To the Editor:—*Will bilateral orchiectomy render an adult male sexually impotent, or is there a possibility of endocrine contributions from other glands supplying the stimulus necessary to coitus? Would such castration aid in deterring the compulsion to commit "sex crimes" of mutilation of children or abuse of children or horror crimes on adult members of society usually classed as "sex maniac crimes"?*

M.D., Michigan.

Answer.—Castration in a male adult leads usually to a decrease in sexual libido to a varying extent, but there is often sufficient sexual potency remaining to perform coitus quite satisfactorily. Castration in a prepubertal male results in almost complete impotency. The adult male retains his neuromuscular reflexes for coitus in spite of castration and not because of the contribution of androgens from other glands such as the adrenals. This operation would probably deter an individual from sex crimes, on a purely hypothetical basis.

SURGICAL SKIN PLANING

To the Editor:—*Where may I get information about surgical skin planing?* *M.D., Ohio.*

Answer.—An article on surgical skin planing for the improvement of acne scars and other types of pitting appears in the *A. M. A. Archives of Dermatology* (68:389 [Oct.] 1953). In surgical skin planing, the operator anesthetizes and temporarily stiffens the skin with a spray of ethyl chloride and then abrades and removes with a revolving wire brush the layer of skin projecting above the base of the acne scars. Usually two or three treatments at monthly or bimonthly intervals will improve the scars considerably. Occasional bad sequelae from this procedure are: (1) hyperpigmentation, especially in dark-skinned individuals, which may persist for a long time; (2) skin erythema, especially in light-skinned individuals, which may take three to six months to disappear; (3) numerous milia in the area operated on, especially after two or three treatments; and (4) scarring in areas where the planing has been carried too deeply.

PENICILLIN

To the Editor:—*Can the ordinary type of repository penicillin be used orally? To do this one would take aqueous procaine penicillin in 10 cc. vial (penicillin G) containing 3,000,000 units, remove it from the vial, and dilute it for the desired amount per teaspoonful, the diluting being done with water.*

Edward S. King, M.D., Shelby, N. C.

Answer.—It should be possible to use procaine penicillin in this way. Several of the commercial preparations of penicillin tablets for oral administration contain procaine penicillin rather than soluble penicillin. This method should result in some saving in cost to help offset the inconvenience involved. It should be realized that procaine penicillin administered by mouth does not possess the advantage of long action that it has when injected parenterally. The possibility of more rapid loss of potency with more dilute suspensions would have to be guarded against as well as inaccurate dosage because of less stable suspensions unless dispersing agents were added to the diluent.

CARE OF TRACHEOTOMY PATIENTS

To the Editor:—*What, if any, deleterious effects might occur from the use of methyl cellulose preparations, similar to that used in patients with dry eyes, if this were instilled into the trachea of a person in whom laryngectomy has been done to moisten the tracheal mucosa?*

Jim Vaughn, M.D., Tyler, Texas.

Answer.—References could not be found in the medical literature on the use of methyl cellulose in handling tracheotomy cases. In the early postoperative period following tracheotomy or laryngectomy, the following solution may be used to moisten the trachea and loosen thickened secretions: Terramycin (aqueous) 500 mg., Alevaire solution, 20 cc. and isotonic sodium chloride solution 80 cc. This is kept in a dropper bottle. One or 2 cc. is instilled into the trachea before and after each tracheal aspiration. Suction catheters are sterilized each time they are used. If secretions are very thick, tenacious, or crusting, 125,000 units of Tryptar is added to this solution as an enzyme digestant. For the chronic care of a patient in whom laryngectomy has been done occasional irrigation with a mixture of Alevaire and sodium chloride solution should be adequate.

POSTANESTHESIA GRANULOMAS

To the Editor:—*A patient who was severely burned about the back had extensive skin grafts for which she was given an anesthetic intratracheally. The intratracheal tube was in place for about six hours. Shortly after the anesthetic the patient developed a choking sensation. A laryngeal examination revealed two large granulomas, one on the right cord and one on the left cord, occupying almost the entire posterior third of the cords. Under direct laryngoscopy both granulomas were removed with biting forceps, obtaining apparently clean cords. The papilloma on the left cord has recurred and has been removed three times since. At the present time the papilloma on the left cord is small but definitely present. Would x-ray therapy be a value of treating this patient, or should the granuloma be treated as it has been in the past, by surgical removal?* *M.D., New York.*

Answer.—The terms "granuloma" and "papilloma" are used interchangeably, although they are two distinct clinical entities. From the history, it is assumed they are postanesthesia granulomas. Occasional laryngoscopic removal when the lesions cause a voice problem is the treatment of choice. X-ray therapy would be of no value. A period of two weeks silence following surgical removal is recommended.

ERUPTION ON LOBES OF EAR

To the Editor:—*A woman has itching of the ear lobes, accompanied by swelling and weeping of the skin. This was attributed to earrings of the clamp type. Recently it has been noted that the reaction of the ear lobes has occurred after the application of Wood Violet cologne, and a similar reaction has occurred in the bend of the elbows where the material was applied. Please comment and name the constituent that may be the offender.*

Lester Adams, M.D., Greenwood Mountain, Maine.

Answer.—The eruption described is no doubt due to the cologne. It is difficult, however, to say which of its constituents may have caused the eruption. Nevertheless, in some patients it is the oil of bergamot, although others of the constituents may have contributed to the eruption as well. Further, it is difficult to obtain the exact formula of many of these proprietary preparations. A contact dermatitis due to the use of cologne is not infrequently seen, and exposure to the sun would seem to accentuate it. Concerning prevention, in addition to the avoidance of contact with any colognes insofar as possible, some of the antihistaminics have been successful in decreasing the threshold, but these have not been completely successful in full desensitization.

SCIATICA

To the Editor:—*What is the present accepted treatment of acute uncomplicated sciatica of "rheumatic origin"? If Thiamine hydrochloride still is one of the best remedies for this pathology, what doses would you suggest? Is the administration of antibiotics of definite benefit?* *M.D., Ohio.*

Answer.—Acute uncomplicated sciatica of "rheumatic origin" is present in certain cases of rheumatoid arthritis or spondylitis. In any event, treatment should be directed toward the arthritis, and a careful search should be made for the cause of the sciatica. Eradication of the cause of the sciatica should be attempted. This may have to be surgical. Thiamine is useful only if the sciatica is part of the picture of thiamine deficiency; otherwise the administration of thiamine does not help.

RHEUMATOID ARTHRITIS

To the Editor:—*A 23-year-old tractor mechanic has complained for five months of early morning tingling, pain, and swelling of both hands, not related to the position of sleeping and relieved after a few hours by heat and exercise. Physical examination (except for some coldness of the fingers), urinalysis, hemoglobin level, and sedimentation rate are normal. The symptoms are prevented by small doses of cortisone but not by aspirin. Will this patient develop more typical rheumatoid arthritis?* *L. D. Baxter, M.D., Hatch, N. Mex.*

Answer.—This patient's symptoms are consistent with rheumatoid arthritis in an early stage, but a definite diagnosis of this condition is not justified in the absence of objective joint swelling. It is likely that he will develop more definite signs of rheumatoid arthritis, although the possibilities remain of a spontaneous remission of symptoms or the continuance for months or even a few years of what has been termed the prodromal phase of the disease. Cervical ribs should be ruled out by roentgenograms. Symptoms of this nature could also be caused by sleeping with his arms over his head, the so-called hyperabduction syndrome. It would seem preferable not to employ cortisone until the diagnosis has been made with certainty. Treatment should consist of additional rest, a more than adequate diet, and the use of heat and aspirin.

GENERAL PARESIS

To the Editor:—*What percentage of people with general paresis or taboparesis would show a negative blood Wassermann and Kahn?* *D. H. Smith, M.D., Warren, Pa.*

Answer.—The percentage of individuals with syphilitic involvement of the central nervous system with negative serologic tests for syphilis will depend on the duration of the disease, the amount of previously administered therapy, and the sensitivity of the serologic procedure employed. The statistics vary considerably, but in general it is believed that the blood Wassermann and Kahn tests, with present-day sensitivity, will give 98 to 100% positive reactions in untreated paretics and 70 to 85% positive reactions in untreated tabetics.

BRUCELLOSIS

To the Editor:—*May I compliment the author of the answer to the query on brucellosis in* The Journal *(158:705 [June 25] 1955). The reply shows an unusual understanding of the problem of chronic brucellosis, including use of desensitization by heat-killed Brucella organisms and the frequent need for psychotherapy in these cases, in order to facilitate recovery. The only part of the reply that is open to question is the statement that "the most effective anti-Brucella therapy is a combination of dihydrostreptomycin or streptomycin and tetracycline given over a period of at least two weeks." Probably the desire to condense the reply led the author to this dogmatic-sounding statement. Actually, the most effective suppressive therapy varies a great deal in different patients. In some, streptomycin and sulfadiazine (or triple sulfonamides) appears to be most effective, bringing about apparent cure in several patients who have remained well for nine years after its use. In still others any of the wide-spectrum antibiotics are effective, depending on the patient's tolerance and clinical response. Even the narrower-spectrum erythromycin exerts a suppressive effect in a large number of patients and may have the advantage of fewer and less severe side-effects. The most effective method in my experience, in the chronic disease, is desensitization with subtolerance doses of heat-killed Brucella abortus vaccine, alternating or concomitant with one or more antibiotics and sulfonamides. Failure of actual cure in many may be due to intracellular growth and reproduction of Brucella, as demonstrated by Buddingh and Goodpasture and by Castaneda and others.*

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EVALUATING A MEDICOLEGAL OFFICE

AUTOPSY INDEX AS A COMPARATIVE STANDARD

Henry W. Turkel, M.D., San Francisco

There is wide and general agreement that 20 to 25% of all deaths require medicolegal investigation.[1] There is little or no agreement on what percentage of these medicolegal cases require autopsy. Some medicolegal officers perform autopsies on all of these cases; others perform it on none.[2] Regardless of the percentage on whom he finds it necessary to perform an autopsy, each officer will tell you that in his jurisdiction there is little or no danger that criminal and violent deaths will be overlooked. Moreover, he believes that in natural deaths a correct and satisfactory cause is given. The causes and circumstances of deaths in various jurisdictions do not vary in any such degree as the variation in percentage of autopsies performed would seem to imply. It is apparent that either some medicolegal offices are doing too few autopsies or perhaps others are doing too many. It is certain that some objective basis need be sought for establishing the percentage of cases that might need an autopsy in order to achieve safe standards of medicolegal practice. Once these are established there would then be available a means of evaluating the level of practice in any given community. Where the standards are being met there would be far more assurance that deaths by crime and violence are not passed over.

Heretofore, it has been rather arbitrarily decided that of all the cases coming into the medicolegal officer's jurisdiction 20% require autopsy.[3] As might be expected, such information arose from those most active in the field. Generally, the percentage they find acceptable is at or below the percentage they find themselves performing in their own jurisdiction. Such basis for setting standards is wholly unsound. Each area has different problems, such as budget and finance, pressure from outside interests, and resistance to autopsy by religious and business groups. Also, depending on the laws existing in the area, more or less autopsies need to be done to meet the legal requirements. Above all, the personal interest of the medicolegal officer profoundly affects the number of autopsies done. With these factors influencing the number of autopsies done, any percentages so established can only reflect what seems practically attainable in a given area or what appears satisfactory to a particular medicolegal officer. There is nothing to assure that such percentages are either medically or legally adequate.

AUTOPSY INDEX

In the past it has been customary to judge an office, in part, on its autopsy rate, i. e., the percentage of medicolegal cases given autopsy. Actually, to say that an autopsy rate is 10% or 100% is utterly meaningless in itself. A medicolegal officer may choose to declare as medicolegal problems only a few of the most outspoken cases. This might amount to as little as 2% of the total deaths in his community. If now, he performs autopsies on all of these relatively few cases, he will present a 100% autopsy rate, yet he has investigated but the smallest portion of what he should investigate, and surely there is much he must be overlooking. Another officer may accept 25% of all deaths in his community for investigation. If he performs autopsies on one-half of these, he will present a 50% autopsy rate. Despite the lower rate in this second instance, the medicolegal officer has more fully and properly discharged his duties. Accordingly, the autopsy rate can be seen to be a deceiving and confusing figure that should be abandoned. In its place is recommended the "autopsy index":

$$\frac{\text{no. of medicolegal autopsies}}{\text{total deaths in the community}} \times 100 = \text{autopsy index.}$$

It is an expression of the ratio of medicolegal autopsies not to the number of medicolegal cases but rather to the

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Coroner, city and county of San Francisco.

[1] (*a*) Regan, L. J.: Doctor and Patient and the Law, ed. 2, St. Louis, C. V. Mosby Company, 1949, p. 264. (*b*) Moritz, A. R.; Cunniffe, E. R.; Holloway, J. W., Jr., and Martland, H. S.: Report to the House of Delegates of Committee of the American Medical Association to Study the Relationship Between Medicine and Law, Chicago, American Medical Association, 1945, p. 4. (*c*) Legislative Research Committee, Minnesota State Legislature, Publication 59, Feb., 1954. (*d*) Turkel, H. W.: Merits of the Present Coroner System: Statistical Comparison with the Medical Examiner System, J. A. M. A. **153**: 1086 (Nov. 21) 1953.

[2] Footnotes 1*c* and 1*d*.

[3] Footnotes 1*a*, 1*b*, and 1*c*.

total number of deaths in the community. This latter is a given quantity, uninfluenced by the medicolegal officer, and is therefore a far more reliable standard. On inspection the autopsy index will be recognized simply as a percentile ratio. Admittedly, the autopsy index tells nothing of the extent of investigation at the scene. It does not evaluate the care and thoroughness of the autopsy. It provides no measure of the use of the microscope or laboratory. *Despite this, it is held that an autopsy is the only certain way to find a true cause of death.* It is the medicolegal officer's most important and useful scientific tool. The fact that it is being used affords the greatest measure of probability that correct causes of death are being found. The necessary information to calculate the autopsy index is available to anyone, simply by examining the local or state health department statistics.

TABLE 1.—*Classification of Deaths Requiring Autopsies*

	No.	% of 400 Coroner Cases *	% of All Deaths in County †
Violent Deaths			
Relationship of trauma to death			
Uncertain or undetermined			
1. Possible criminal liability of another	39	9.7	2.4
2. Possible civil liability of another..	25	6.2	1.5
3. No apparent liability..............	18	4.5	1.1
Believed evident			
4. Possible criminal liability of another	26	6.5	1.6
5. Possible civil liability of another..	17	4.3	1.1
6. No apparent liability..............	29	7.2	1.8
Other	14	3.5	0.9
Nonviolent Deaths			
No known medical attention past year			
7. No information on health status or events before death..............	65	16.2	4.0
8. Believed in good health by acquaintances; no knowledge of events before death................	19	4.8	1.2
9. Believed in ill health by acquaintances; no knowledge of events before death..........................	21	5.2	1.3
10. Acquaintances or witnesses describe symptoms suggesting natural death	47	11.7	2.9
Under treatment or treated past year			
11. Physician states death unexpected or unaccountable....................	33	8.2	2.0
12. Physician states not unexpected; no witnesses to events before death	18	4.5	1.1
13. Physician states not unexpected but not recently in attendance; symptoms described by witnesses suggest natural death.............	29	7.2	1.8

* Total of 2,350 coroner cases, 1954.
† 9,750 deaths in county, 1954.

PRESENT STUDIES

The San Francisco coroner's office accepts as coroner's cases 24% of all deaths in the county. This meets the needs prescribed by virtually all authorities. Also, in all these cases autopsies are performed by certified or board-eligible pathologists. Each case is investigated at scene by a full-time trained deputy. Among other ings, the deputy takes notes at the scene, examines for vidence of external trauma, interrogates witnesses, and makes a search for evidence or history of medical treatment. His detailed report includes statements taken from any physicians known to have been treating the deceased or from hospital records. A series of 400 consecutive coroner's cases was reviewed. The cases were broken down into groups according to the detailed circumstances of the death. Also, the number found in each group was translated into the percentage of total deaths in the community that the group represented. Then, in the subsequent discussion, each group was evaluated to determine whether the cases in that group would reasonably need autopsy to safely and properly establish the cause of death. The groups requiring autopsy were also gathered together and totaled according to whether they fell into one of the three following classes: (1) crime or suspicion thereof, (2) violence or casualty, and (3) *no history of medical attendance. This* last grouping is of importance since some states require investigation of death in class 1 only. Others require an investigation of classes 1 and 2. Still others require investigation of deaths in all three. Taking in account what is legally required in any given state, the number of medicolegal autopsies that might be needed for safe standards of practice can be approximated in relation to total deaths in a given area (table 1). In many jurisdictions certain of the groups listed in table 1 would be signed out with the presumed cause of death. *Particularly is this true of* cases without evidence of trauma and with some history to suggest previous illness. Table 2 shows the number and type of errors that would have been made had the presumed cause of death been used. This could be shown because in all these cases there was available the actual cause of death as determined at autopsy.

CRIME OR SUSPICION THEREOF

When there is a possibility of criminal liability (groups 1 and 4), an autopsy must be done. It makes no difference that the means or cause may appear evident on the surface. The courts rightfully require that not only the cause of death shall be available to them but also the exact mechanism shall be known. If any doubt remains, the defense will capitalize on it to the extent that justice may not prevail. There must be proof beyond any doubt that the deceased did in fact come to his death by the criminal instrumentality presumed to have been used. The vaguest possibility that some other cause or contributing factor played a part must be ruled out or at least clarified. Of even greater importance is the responsibility to see that, no matter what the apparent cause of death, no one should be prosecuted, much less convicted, unless there are clear and certain medical findings to prove that his act did actually cause the death. Criminal cases of this order account for 4% of the total deaths in a community.

A sizable number of deaths occur without previous medical attendance and with no information on events preceding death (groups 7 and 8). Most are instances of persons who were already dead when found. In the absence of external trauma these deaths are, in many jurisdictions, presumed to be of natural causes, and are usually signed out without autopsy. Generally, the death certificate is filled out with some commonly encountered but highly technical cause of death. Such impressive diagnosis as "hypertensive and arteriosclerotic heart disease" will no doubt satisfy a lay observer. Actually though, the circumstances would permit no more of a conclusion than perhaps that this is a "presumed natural death." Such a cause of death on a certificate would be reason for its rejection by the local registrar. A correct statement of the cause of death is obviously expected and, in fact, is required.[4] An outright fabrication of a cause of death is intellectually dishonest. Indeed, it is even less exact than the many-year-old and much ridiculed "just plain died." The latter, while to be condemned, tells us more or what was actually known than does a medical diagnosis fabricated without basis.

An even more important reason to perform autopsies in these cases can be seen in table 2. Of 232 deaths presumed by the evidence to be natural, 8 (3.5%) actually were due to violence and 6 more were due to contagious and reportable disease. The causes in these violent deaths were asphyxia, poisoning, traumatic intracranial hemorrhage, laceration of the brain with skull fracture, intratracheal foreign body, and accidental carbon monoxide poisoning without external evidence. The contagious cases are of importance since their being reported is of concern in the general public welfare. There is reasonable cause to believe that these groups (7 and 8) should have autopsies. They constitute 5.2% of all deaths. In group 11 the physician in attendance has stated that he is unable to arrive at the cause of death or that the death was unexpected. It is unreasonable to presume that another person, physician or not, should simply review the same history or view the body and be able to arrive at the cause of death. Without doubt these cases, comprising 2% of all deaths, must have autopsies.

In groups 9 and 12 there is knowledge of the preexisting illness. However, no creditable person has seen the deceased for some time before his death nor is there knowledge of events preceding the death. Persons with long-standing illness may well die of that illness and frequently do. But, they also may die of any of the causes from which healthy persons die. In the absence of medical attention it is foolhardy to simply presume that they must have died of their preexisting ailment simply because they were known to have hypertension, cardiac disease, or even carcinoma. As a matter of fact, the proportionate incidence of certain types of violent death is higher in this group than in the general healthy population. Unless there is conclusive evidence at the scene to assure beyond all reasonable doubt that the preexisting illness did cause the death, the officer is being unduly lax if he fails to investigate fully. Such conclusive evidence at the scene is uncommon. Any less caution in such cases suggests that he is seeking and taking the easiest way out rather than fulfilling his duty. While this way out generally meets with the approval of the surviving family and even, at times, with the physician's approval when the family is pressing him, it is neither safe nor accurate. These cases constitute 2.4% of all deaths and should have autopsies.

In all of the foregoing groups there is a reasonable possibility that crime or violence will be exposed by autopsy. There is, in all, a significant element of doubt. They total 13.7% of all deaths. Thus, in a state that requires that criminal and suspicious deaths shall be investigated, a minimum autopsy index of 13.7 should be maintained to assure safe standards.

VIOLENCE OR CASUALTY

Groups 2 and 5 include those cases in which there appears to be some civil liability on the part of another. Many civil court proceedings revolve about medical testimony on the cause of death. The total monetary value of court judgments that are thus both granted and denied is huge. Of comparable size is the sum total of insurance company claims paid or denied. It is a matter of great public concern that these should be decided fairly. It is the medicolegal officer's responsibility and duty to see that the true facts are provided. Many millions of dollars are spent maintaining the civil courts so that justice will prevail. By comparison, the cost and amount of work in performing the necessary autopsies would be negligible. So doing would eliminate injustices, and, above all, it would do much to decrease the instances of fraud that may frequently be perpetrated by plaintiffs and claimants. Equally, it can assure that in deaths wherein the civil liability of others is unknown to the surviving family, the autopsy findings may afford the first knowledge of this. It can prove of the utmost significance in the welfare and circumstances of the survivors in providing them with their rightful due.

TABLE 2.—*Number and Type of Errors Had Autopsy Not Been Performed*

No Evidence of Violence or Trauma, Death Presumed Natural	
At autopsy	
Proved as natural	218
Proved as violent	8
Proved natural but contagious	6
Total	232
Evidence of Violence or Trauma	
At autopsy	
Proved as violent	91
Proved as natural	51
Remains uncertain	12
Total	154

Table 2 shows that of 154 deaths possibly due in whole or in part to violence or casualty, 51 (30%) proved due to natural causes. These findings not only relieve a significant number of individuals of unjustified civil liability; they equally relieve many who might otherwise feel moral responsibility for the death. Violent or casual deaths involving civil liability only amount to 2.6% of all deaths, and these should have autopsies. Thus, in any state requiring investigation of violent and casual deaths as well as criminal and suspicious deaths, a minimum autopsy index would be 16.3.

INSUFFICIENT MEDICAL HISTORY

Those deaths presumed to be nonviolent, to which there were lay witnesses who can describe the symptoms or events before death—are tabulated in groups 10 and 13. It rests in the medicolegal officer's judgment to decide whether he will accept these descriptions as adequate for determining a cause of death. That a person complained of pain in the chest or abdomen, or simply collapsed at home or at work before witnesses, is hardly sound basis for a conclusive cause of death. A cause of death based on such evidence is inexact both technically and medically. From the experience gained in maintaining a high autopsy index, it is certain that without such autopsies many violent deaths would be overlooked. Such findings as pulmonary embolus, aspiration of foreign body, head injury, and poisoning are not uncommon in these cases. These account for 4.7% of all deaths. Thus, in a state requiring investigation of death by crime or violence or casualty and also all deaths occurring without medical attendance, a minimum autopsy index of 20.7 would be required.

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[4] Physician's Handbook on Death and Birth Registration, ed. 10, U. S. Dept. of Health, Education and Welfare, Public Health Service, 1949. 83rd Congress, Title III of Public Health Service Act, Section 312a.

SOME ASPECTS OF AUTOPSY INDEX

Highest Standards.—Despite that the remaining 4% of all deaths have no apparent liability of others, they nonetheless deserve consideration. On the surface, suicides by jumping from heights, by hanging, or by overdose of medication are reasonably evident. It is advisable to assure that no other agent was involved or that the person was not already dead before the scene was prepared to simulate a suicide. Particularly is this necessary in the absence of handwritten notes that can be checked. Deaths by fire, anesthetic deaths, surgical mishaps, errors in therapy, and deaths in institutions complete the group. The ultimate in scientific accuracy and in the discharge of responsibility to the public is attained by an autopsy index of 23 to 25.

Need for High Index.—Some will argue that only an occasional case would be uncovered by such high standards, perhaps not enough to justify the work and expense. While this is not true, for the moment I will concede that only a few such cases are discovered. Often many thousands of dollars of public funds, as well as limitless effort, are spent in prosecuting a single major criminal case. Why should that much not be spent to find out another? Why should the crime as yet unrecognized be totally ignored? Why should the criminal escape unpunished? Certainly it is inconsistent to go to such ends in one crime and disregard another because of similar cost or effort. Moreover, the cost is not comparable. The service to the public in detection and prevention of crime, in the adjudication of civil matters and in contribution to the general public welfare many times outweighs the considerations of the cost or effort in performing these autopsies. Furthermore, once the administrative machinery and personnel are set up to handle a given number of autopsies on a given budget, an increase of, let us say, 10% autopsies does not increase the budget by 10%. It would indeed be much less than 10%.

Feasibility.—To some it may appear that an autopsy index of 20 cannot be achieved. It is often said that because of public resistance to autopsies it simply would not be tolerated. This is wholly without basis. In California 14 of the total 58 counties maintain an autopsy index of 20 or better.[5] Some are as high as 30. This is clear evidence that high standards can be attained in both urban and rural areas, providing that the medicolegal officer has the determination and courage to do so. One might wonder whether there is something special about the California law that permits such standards. In essence it is the same as in most every other state.[6] All states authorize investigation of criminal and suspicious deaths. Virtually all require investigation of violent or casual death. The majority make it the legal duty of the medicolegal officer to certify all deaths in the absence of an attending physician. (Even if not specifically provided in the law, practically everywhere, the medicolegal officer is the one called upon to certify the cause of death in such instances.) By no mere chance, these also are the basic provisions of the California law. It would appear that in almost any state it is possible, though not necessarily certain, that high standards could be met.

Application.—Despite the admirable standards maintained in many California counties, the average autopsy index in the state is 13.2. This is an unduly low figure. A review of health department statistics[5] reveals that the low average is attributable to one or two heavily populated jurisdictions that maintain the alarmingly low autopsy index of 10 or less. A knowledge of this permits directing attention and seeking improvement precisely where it is needed. Once made aware of their comparative failing, there is reasonable probability that, with sufficient urging and support, these few jurisdictions could be improved. Bringing them up to standard is far the easiest approach and would provide a statewide level of practice fully acceptable and in this case, second to none. This could be applied to many other states and indeed should be done.

Causes of Low Index.—Having established a minimum acceptable autopsy index for any given area, any lesser value suggests failing on the part of the medicolegal officer. He is yielding to expediency, bending under pressures applied, or is bound by budget matters. Indeed, he may be plagued by all three. It is frequently said that there is a general lack of public concern. It is often held that resistance to autopsies by the public and by morticians is insurmountable. These must be more apparent than real. In the 14 California counties that maintain an autopsy index above 20, the public is spending the necessary money and the morticians are amenable to such standards of practice. Neither the public nor the morticians are that much different in the counties with poor standards than they are in those with high standards. There is reason to believe that in any area acceptable standards can be achieved. To gain public support in any jurisdiction where it is lacking requires a firm and conclusive basis for comparison. First, it must be established, on sound consideration, that improvement is needed; second, it must be shown exactly where the improvement is needed; and, third, the urgency and importance must be demonstrated. It is believed that the autopsy index can serve well in these regards.

SUMMARY AND CONCLUSIONS

Four hundred medicolegal cases were classified in groups according to the nature and circumstances of death. From this information it was then decided which of these groups might reasonably require autopsies to properly establish the cause of death. From these tabulations it was determined what proportion of the total deaths in the community would need autopsy to maintain safe standards of medicolegal practice. This quantity is termed the "acceptable autopsy index." The following minimum acceptable autopsy index is suggested for the various states according to their respective laws:

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[5] Statistics of State of California, Department of Public Health, Death Records, 1953.

[6] Coroners in 1953: A Symposium of Legal Bases and Actual Practice, New York National Municipal League, March, 1954.

Criminal or suspicious deaths only	13.7
Criminal or suspicious deaths and deaths by violence or casualty	16.3
Criminal or suspicious deaths, deaths by violence or casualty, and deaths with no history or recent medical attendance to afford true cause	20.7
Highest desirable standards	25.0

It is believed the vast majority of states have laws adequate to permit a thorough investigation and autopsy of a much higher proportion of medicolegal cases.

The result of this study shows the pressing need for this greater number of autopsies and offers some medical and legal basis to justify their performance. It is suggested that the most practical and reasonably accurate means of evaluating the standards of medicolegal practice in any given community is by use of the "autopsy index." This requires observing the number of medicolegal autopsies performed in relation to the total deaths in the community. This is in preference to the current practice of simply noting the percentage of autopsies performed on medicolegal cases. This obviates the confusion that results from a medicolegal officer certifying very few deaths in the community as medicolegal problems and performing autopsies on a large percentage of these. While the percentage is high in the later instance, actually, few cases have been investigated. The quantity $\frac{\text{no. of medicolegal autopsies}}{\text{total deaths in the community}} \times 100$ is termed the "autopsy index." It is a valuable measure of the level of practice in any given area when compared to other areas or to certain stated standards. Relatively few communities meet the requirements of a minimum acceptable autopsy index.

650 Merchant St. (11).

EFFECTIVENESS AND COMPLICATIONS OF NEEDLE BIOPSY OF THE LIVER

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One hundred thirty-nine needle biopsies of the liver have been carried out at the Richmond Veterans Administration Hospital over the past eight years by means of the Silverman needle through either an abdominal or a transthoracic approach. All the biopsies were performed for diagnostic purposes on 119 patients whose final diagnoses, established by clinical, biochemical, and histological evaluation or at autopsy, were as follows:

Laennec's cirrhosis	69
Fatty metamorphosis, due to alcoholism	4
Carcinoma, primary or metastatic	26
Granulomas	3
Leukemia	3
Obstructive jaundice	2
Primary amyloidosis	1
Toxic hepatitis	1
No hepatic disease	10

EFFECTIVENESS

Nineteen biopsies failed to reveal the diagnosis finally established, so that the incidence of failure was 13.8%. In only two cases was the failure due to insufficient biopsy tissue. Metastatic carcinomas accounted for 12 of the cases, primary hepatomas 2, portal cirrhosis 4, and granuloma 1. It is evident that 15 of the 19 missed diagnoses occurred in cases in which there were focal lesions, i. e., carcinomas and granuloma. Fourteen of these cases were among the 31 in which ultimately primary or metastatic carcinomas were demonstrated at autopsy, operation, or subsequent needle biopsies, an error of 45.2%. Four biopsies failed to show a histological picture of portal cirrhosis, an incidence of 4.6%. The tissue obtained in each case was that of normal liver or possessed only minor changes that would not warrant a pathological diagnosis of cirrhosis. This error was presumably due to needling a well-regenerated nodule of hepatic cells and failure to obtain adequate amounts of interlobular tissues.

COMPLICATIONS

Hemorrhage was the only severe complication encountered. It occurred in four cases, in one of which the patient died. One patient experienced a transient fall in blood pressure to 90/60 mm. Hg but recovered uneventfully and required no transfusions. This biopsy was performed with an abdominal approach and revealed moderately severe fatty metamorphosis. His prothrombin time was 38%.

Two patients bled profusely into their peritoneal cavities, causing shock and necessitating blood transfusions. One of these patients had a primary hepatoma superimposed upon marked portal cirrhosis. The biopsy specimen was obtained by the abdominal approach. His prothrombin time was 75%. One week after biopsy 800 cc. of bloody fluid were obtained by a midline abdominal paracentesis. The second patient had chronic myelogenous leukemia, which was demonstrated in the liver tissue obtained by transthoracic biopsy. Prior to biopsy, his prothrombin time was 30%, but it was raised to 60% by the administration of vitamin K_1 intravenously. Eight hours following biopsy the patient went into shock and showed evidence of peritoneal irritation. Seven pints (3,312 cc.) of whole blood were administered as well as vitamin K_1 daily, without evidence of cessation of the

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bleeding. Meanwhile, a prothrombin consumption time of 20% was demonstrated and, after a single transfusion of 500 cc. of fresh whole blood, bleeding ceased and he recovered uneventfully. The single death was due to severe intra-abdominal hemorrhage and irreversible shock. The patient had severe Laennec's cirrhosis, and the biopsy specimen had been obtained by the transthoracic route. This patient's prothrombin time had been 33% prior to biopsy, and, at autopsy, a well-defined puncture hole was seen in the liver, without evidence of laceration.

These cases represent an incidence of hemorrhage of 2.9% and a mortality rate of 0.72%. It is interesting to note that two of the hemorrhages occurred with the abdominal approach, an incidence of 1.7%, whereas, two cases of hemorrhage occurred with the transthoracic approach, an incidence of 10.5%. The remainder of the patients tolerated the procedure without ill-effects, except for 16 patients who complained of transient pain localized at the site of biopsy that occurred within 24 hours of the biopsy and required, at most, one dose of a narcotic. Of these, only two had prothrombin times below 50%. Twelve of the biopsies had been performed by the abdominal approach, an incidence of 10%, whereas four were performed by the transthoracic route, an incidence of 21.1%.

COMMENT

In 139 needle biopsies of the liver performed on 119 patients the diagnosis was effectively made in 86.2%. Diagnoses were missed in 19 cases, in only 2 of which was the error due to failure to obtain sufficient tissues. Fifteen of these errors occurred in patients with focal hepatic lesions consisting of 12 metastatic carcinomas, 2 primary hepatomas, and 1 granuloma. These cases represent only a small percentage of the total number in which biopsies were done but constitute 45.2% of the total number of cases of primary and metastatic hepatic carcinomas. This is a considerably higher incidence than that reported by Safdi and co-workers,[1] in which needle biopsies failed to demonstrate neoplasms in only 12 of 53 patients, an incidence of 22.6%. The higher incidence of missed diagnoses in our study may be due to the fact that the presence of metastatic neoplasms within the liver was not established in several cases until three to six months later, and conceivably the neoplasms may not have been present at the time of the original biopsies.

Four cases of "diffuse" hepatic disease were missed, an incidence of 4.6% of the total number of cases in which biopsy of cirrhotic livers was done. In each case, an adequate core of liver tissue was obtained that histologically revealed normal hepatic cells, with little or no interlobular tissue. In such instances where adequate gross tissues are obtained but microscopically only normal hepatic cells are seen in the absence of any periportal supporting tissue, the possibility of a regenerated hepatic nodule should be entertained and emphasis accordingly placed upon the degree of cellular regeneration and the architectural distribution of the cells.

The complications encountered in this study consisted of 4 hemorrhages, with one fatality, and 16 cases of transient abdominal pain requiring a single dose of narcotic, with disappearance of symptoms within 24 hours. The one death represents a mortality rate of 0.72%, which is far in excess of the incidence of 0.085% established by Zamcheck and Klausenstock[2] in their study of 20,016 needle biopsies of the liver. In this relatively small study, however, it cannot be considered statistically significant and no doubt is an example of the "error of small numbers."

Zamcheck and Klausenstock,[2] from data obtained by personal communication with Klatskin, reported no complications in 82.6% of 352 liver biopsies, pain requiring analgesics in 13%, fall in blood pressure in 1.4%, and low blood pressure requiring transfusion in 0.8%. In comparison, our experience may be summarized as follows:

No complications	85.6 %
Pain requiring analgesics	11.5 %
Fall in blood pressure	0.72%
Low blood pressure requiring transfusion	1.44%

Analysis of the prothrombin times obtained in the patients with complications reveals that in three of the four who had hemorrhages the prothrombin time was less than 40% and in the fourth 75%. In each case, vitamin K_1 had been administered, with transient restoration of the prothrombin time to above 60%. It is felt, in retrospect, that the elevation of the prothrombin time prior to operation created a false sense of security. It appears that when there is a significant depression of the prothrombin time, serious consideration must be given to the risk of hemorrhage and, if the biopsy is performed, adequate amounts of vitamin K_1 should be given preoperatively and permanent restitution of a normal time assured. Preferably, administration of vitamin K_1 should be continued postoperatively until all danger of hemorrhage has passed. Attention to prothrombin consumption time is also important, since it may be dangerously low even in the presence of relatively normal prothrombin activity.

One patient in whom the above precautions were carried out continued to bleed in spite of repeated transfusions and administration of vitamin K_1. Biopsy reveale chronic myelogenous leukemia. The prothrombin consumption time was found to be 20%. The hemorrhag was halted abruptly with the transfusion of 500 cc. o fresh whole blood. This experience suggests that whe a blood dyscrasia is suspected, even in the face of norm bleeding, clotting, and prothrombin times, a prothromb consumption time should be determined prior to oper tion in order to reduce the risk of hemorrhage. It wou probably be wise to utilize this test also in cases of di fuse hepatic disease.

The liver biopsies in this study were performed, whe ever possible, by the abdominal approach; however, 19 cases the transthoracic route was required. It is i teresting to note that two of the patients with hem rhage, including the one who died, had transthora biopsies. There was a 10.5% incidence of hemorrha in the transthoracic group, as opposed to an incidence of 1.7% in the abdominal group. The frequency of transient pain localized to the site of transthoracic puncture was twice that encountered with the abdominal approach, the incidences being 21.1% and 10.0% respectively.

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[1] Safdi, S. A.; Gall, E. A.; Kumpe, C. W., and Schiff, L.: Needle Biopsy of the Liver: Experiences with Malignant Neoplasm, Gastroenterology 11:93-99, 1948.

[2] Zamcheck, N., and Klausenstock, O.: Medical Progress: Liver Biopsy: II. The Risk of Needle Biopsy, New England J. Med. 249:1062-1069, 1952.

These findings strongly implicate the transthoracic approach as a significant factor in the incidence of operative and postoperative complications. This might well be anticipated in view of the proximity of the intercostal vessels and the lung tissues, the dependence upon the patient's ability to control his respiratory movements during the procedure, and the danger of laceration of diaphragmatic vessels. This approach should be reserved, therefore, for those cases in which the abdominal approach is impossible and in which the diagnostic worth of the biopsy outweighs the risk. The advantage of this mode of approach over that of exploratory laparotomy should be carefully considered.

SUMMARY

In a total of 139 needle biopsies of the liver in 119 patients, 120 were performed by the abdominal approach and 19 by the transthoracic. In 86.2% of the biopsies the diagnosis was accurate. Portal cirrhosis was missed in 4.6% of the total and carcinomas in 45.2%. The mortality rate was 0.72% (one case). Postbiopsy hemorrhage occurred in four cases, including the fatal one, an incidence of 2.9%. Transient localized pain occurred in 16 patients, an incidence of 11.5%. Low prothrombin times were implicated in three of the four cases of hemorrhage, and its correction before and after biopsy is very important. A low prothrombin consumption time was the only abnormality in the clotting mechanism of a patient with chronic myelogenous leukemia who bled postoperatively. It should be determined whenever a blood dyscrasia is suspected. The transthoracic route is a significant factor in the incidence of complications.

VISUALIZATION OF BILIARY DUCTS BY INTRAVENOUS INJECTION OF NEW CONTRAST MEDIUM

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and
Robert M. Kark, M.D., Chicago

Although cholecystography was introduced by Graham and Cole in 1924,[1] until recently there was no simple method of making roentgenologic studies of the bile ducts. Radiopaque materials had to be injected directly into the common duct during or after operation,[2] or they were introduced percutaneously under peritoneoscopic visualization.[3] The necessity of a method that will give good visualization of the gallbladder and bile ducts without surgery can be well appreciated. Recently such studies have been reported from Germany,[4] in which an iodine-containing substance that is actively excreted by liver cells when injected intravenously is used. The high iodine content of the substance makes it possible to visualize the bile ducts early after injection and the gallbladder later. The concentrating power of the gallbladder is not necessary for visualization as it is with other materials. The German workers [5] have reported that, in the absence of parenchymal liver disease, 90% of the substance is removed from the blood stream by the liver and excreted with bile, the remainder being excreted by the kidney. No absorption takes place from the gastrointestinal tract. The iodine is stated to be firmly bound to the molecule, and apparently the dye is excreted in feces or urine without degradation; however, this has to be proved—perhaps by using dye tagged with radioactive iodine. The high molecular weight [6] of the compound may contribute to its selective excretion by the liver.

This paper reports studies made on 21 patients, with and without hepatobiliary disease, who were x-rayed after injection of sodium iodipamide (Cholografin). This radiopaque solution is the disodium salt of N,N′-adipylbis(3 amino-2,4,6-triiodobenzoic acid), and, through its use, satisfactory visualization of the hepatic, cystic, and common bile ducts, as well as the gallbladder, was obtained. Patients were selected for study on the basis of history, physical findings, and tests of liver function. Three patients who were free of hepatobiliary disease were chosen to serve as controls. The remaining 18 were selected because of suspicion that they might have abnormalities of the biliary duct system.

MATERIAL AND METHODS

Sodium iodipamide at present is supplied in 20 cc. ampuls of a 20% aqueous isotonic solution containing 4 gm. of the active agent. In rats, the LD_{50} is 3.4 gm. for sodium iodipamide, while for the preparation for oral use, iodo-

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The tables to which reference is made in the text have been omitted from THE JOURNAL because of space limitations and will appear in the authors' reprints.

Dr. Mark Lund of E. R. Squibb & Sons, New York, furnished the Cholografin for this study.

[1] Graham, E. A., and Cole, W. H.: Roentgenologic Examination of the Gallbladder: A New Method Utilizing Intravenous Injection of Tetrabromphenolphthalein, J. A. M. A. **82**: 613 (Feb. 23) 1924.

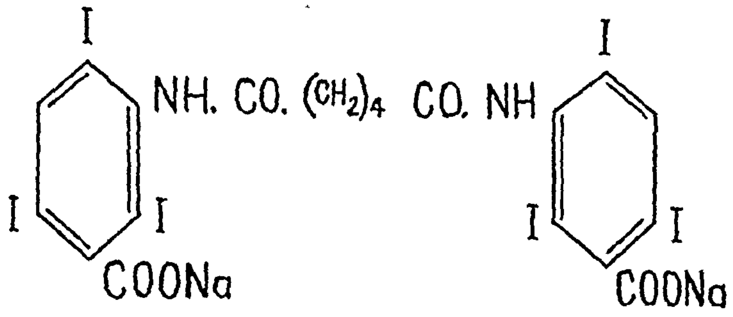
[2] Caeiro, J. A.: Biliary Fistula and Examination by Lipiodol, Bol. y trab. dela Soc. de cir. de Buenos Aires **12**: 855, 1928. Cotte, G.: The Radiological Exploration of the Biliary Tracts After the Injection of Lipiodol Following Cholecystotomy and Cholecystectomy, Soc. nat. de chir. **55**: 863, 1929. Rudstrom, P.: Cholangiography During Surgery, Acta chir. scandinav., supp. 97, 1944.

[3] Henning, N., and others: Laparoscopic Cholecysto-Cholangiography, München. med. Wchnschr. **94**: 829, 1952. Royer, M.: Laparoscopic Cholangiography in Lithiasis of the Choledochus, Día méd., Buenos Aires **25**: 265, 1953.

[4] (*a*) Frommhold, W.: A New Contrast Medium for Intravenous Cholecystography, Fortschr. Geb. Röntgenstrahlen **79**: 283, 1953. (*b*) Gaebel, E., and Teschendorf, W.: Demonstration of Biliary Ducts with "Biligrafin" (Schering) (Non-Operative Cholangiography), Roentgen-Blaetter **6**: 162, 1953. (*c*) Hornykiewytsch, T., and Stender, H. S.: Intravenous Cholangiography, Fortschr. Geb. Röntgenstrahlen **79**: 292, 1953.

[5] Frommhold.[4a] Hornykiewytsch and Stender.[4c]

panoic acid (Telepaque), the LD_{50} is 0.36 gm. when given intravenously.[4a] The formula for iodopanoic acid is 3-(3-amino-2,4,6-triiodophenyl)-2-ethylpropanoic acid. In pure form, sodium iodipamide is a crystalline substance. The molecular weight is 1183.35, and the compound contains 64.32% iodine. Its structural formula is:



The tests of liver function included one minute and total bilirubin, serum cholinesterase levels, measurement of gamma globulin, and a number of flocculation tests, including the cephalin flocculation and zinc and thymol turbidity tests. These were done by standard techniques or modifications thereof that have been reported previously.[7] Serial follow-up studies of liver function were also made to determine if the dye had any effects on liver function. The control tests were made in the morning before the dye was injected. A second series of tests was made 48 hours after injection, and the third was done one week later. Patients whose tests were found to be abnormal before injection of the contrast medium were studied on a fourth occasion, one month after injection.

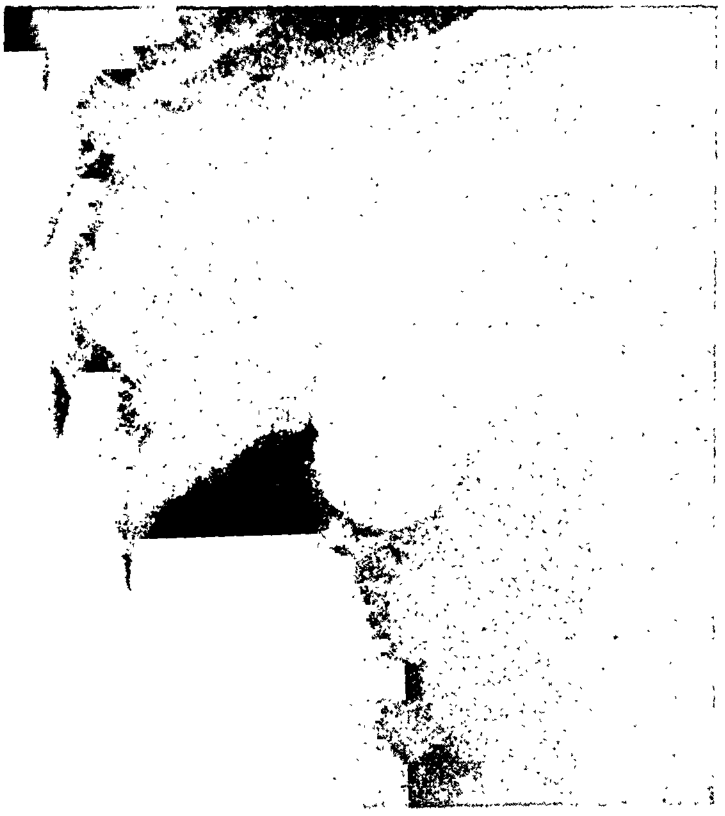


Fig. 1.—O. McN. Normal gallbladder and ducts one hour after injection of one of control patients.

In preparation for the study, the patient was given a cleansing enema the night before, and all oral intake was suspended after midnight. A preliminary posterior-anterior film of the right upper quadrant of the abdomen was taken before injection of the dye. A dose of 1 cc. of the solution was given intravenously as a test for hypersensitivity, although the conjunctival test may suffice.[8] After 5 minutes, 40 cc. of the solution was injected slowly; this usually took 8 to 10 minutes.

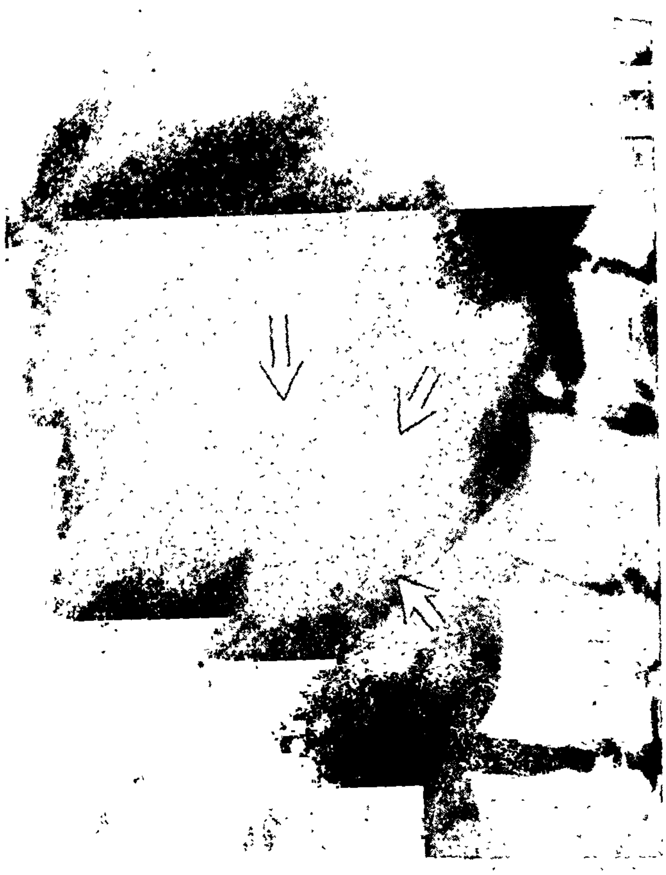


Fig. 2.—H. G. Stones in gallbladder of one of patients with cholelithiasis. Neck of gallbladder filled; cystic and common duct normal.

Roentgenograms were taken immediately, 10 minutes, 20 minutes, 30 minutes, and one hour after the required amount of the solution was injected. Two views, posterior-anterior and left anterior oblique of the right upper quadrant, were taken. A right posterior oblique was substituted if the left anterior oblique film did not prove satisfactory. The films taken immediately after injection have now been eliminated, as not enough material was excreted by the liver to visualize the ducts. For an ordinary cholecystogram 20 cc. is reported to be sufficient for visualization of the gallbladder within two hours after injection. For duct visualization 40 cc. is used. These studies have been confined to visualization of the ducts only.

RESULTS

No serious reactions during or after the injection of the solution were encountered. One-half of the patients experienced no symptoms, the rest stated that they had noticed a peculiar smell, metallic taste, sensation of warmth, pain in the arm and shoulder during injection, or dizziness. Two patients experienced slight nausea. It appears that the development of reactions was a function of the rate of the injection. All the side-effects were transitory. This is in keeping with the previous studies.[9]

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6. Pahl, R.: Rapid and Extended Diagnosis of Biliary Ducts with a New Intravenous Contrast Medium, "Biligrafin," Deutsche med. Wchnschr. 79: 363, 1954.

7. Morey, G. R.; Paynter, C. R.; Consolazio, C. F., and Kark, R. M.: Metabolic and Clinical Effects of Different Regimens in Patients with Chronic Liver Disease, Metabolism 1: 314, 1952.

8. E. R. Squibb & Sons: Personal communication to the authors.

9. Frommhold.[4a] Gaebel and Teschendorf.[4b] Hornykiewytsch and Stender.[4c] Pahl.[6]

The data on the three control patients are shown in table 1. Table 2 summarizes findings in five patients with gallbladder symptoms who were not operated on before the examination. Table 3 summarizes findings in 13 patients who had the so-called postcholecystectomy syndrome. In the control group of three patients (table 1 and fig. 1), good visualization of the ducts was obtained within 10 to 30 minutes after the solution was injected. The gallbladder was visualized in one-half hour to two hours; occasionally visualization of the urinary collecting system occurred within 20 to 30 minutes. When this happened, oblique films were necessary to separate overlapping structures. Of five patients (table 2) who had signs and symptoms of hepatobiliary disease but who did not have previous gallbladder or common duct surgery, visualization of the ducts was obtained in four. In the patient with biliary cirrhosis the ducts did not fill (E. M.). In two patients (H. G. and M. S., fig. 2) with cholelithiasis, the ducts filled well and were normal in size. In the patient (D. B.) who had vague generalized pain without any definite gallbladder symptoms, the ducts filled well but appeared slightly dilated. The presumptive clinical diagnosis was a tumor causing a partial obstruction of the bile ducts.

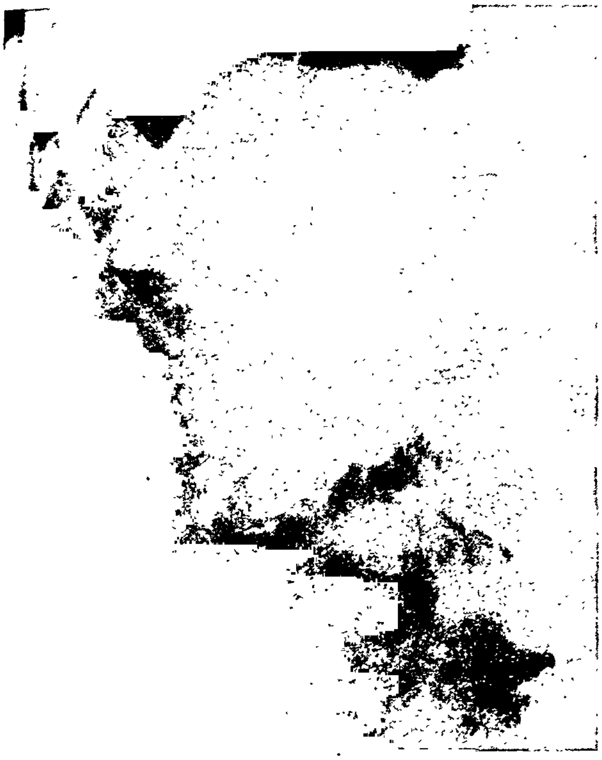

Fig. 3.—D. D. Cholecystectomy 13 years ago. Choledochoenterostomy 12 years ago. Persistent pain, intermittent jaundice. X-ray shows stricture of hepatic duct.

In 13 patients with postcholecystectomy symptoms (table 3) 5 patients were found with poor visualization to nonvisualization of the ducts and 8 with good visualization. Stricture of the common duct was diagnosed in one patient (D. D., fig. 3) preoperatively and was subsequently confirmed at operation. In two patients (T. R. and N. C.) the diagnosis of recurrent pancreatitis was made after this study ruled out any stricture or stone in the biliary ducts. In one of these patients (N. C., fig. 4) the ducts were dilated without any demonstrable cause. In one patient cholangiography was done on two occasions; once before cholecystectomy and common duct exploration and, as the patient continued to have pain and abnormal liver function test, two months after surgery. Good visualization of the ducts was obtained on both occasions, and the patient was discharged from the hospital without additional surgery. The remaining four patients had recurrent attacks of abdominal pain following cholecystectomy. Good visualization of the ducts was obtained, and the pain could not be attributed to common duct pathology.

Some or all of the liver function tests were abnormal in 11 patients in this series (tables 1, 2, and 3). In some, however, only the flocculation tests and gamma globulin levels were abnormal, which can very well be caused by conditions other than liver damage.[10] In only one patient (E. G.) was any significant deterioration of tests of liver function detected that may be ascribed to the injection of sodium iodipamide. In 6 of 11 patients good visualization of the biliary ducts was obtained.

COMMENT

The study of the bile ducts of such a small group of patients does not warrant any conclusions. When the results of these studies were compared with those of the German workers [9] who have made extensive studies with this substance, several of their observations were confirmed. First, the contrast medium did not produce any serious ill-effects; liver function was not disturbed; and

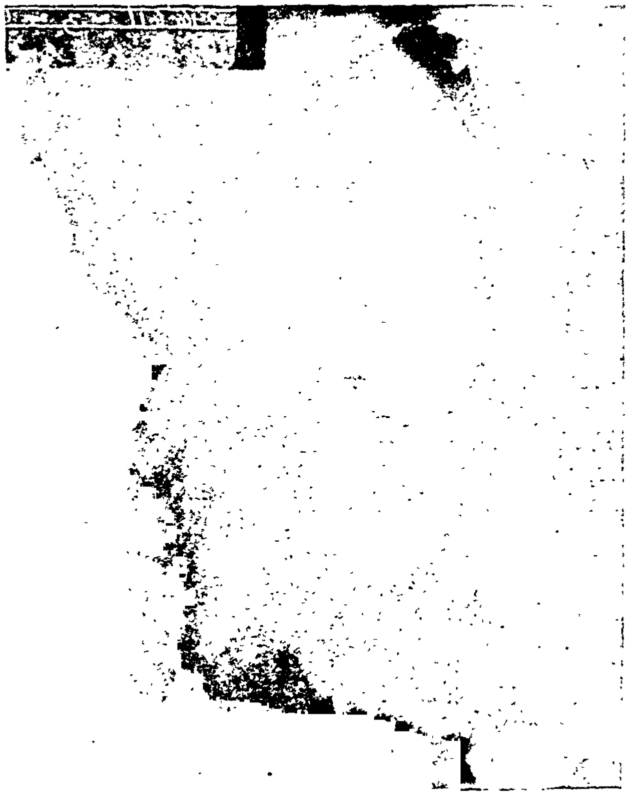

Fig. 4.—N. C. "Postcholecystectomy syndrome." Dilated but patent common duct. Diagnosis: chronic pancreatitis.

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[10] Hanger, F. M.: The Meaning of Liver Function Tests, Am. J. Med. 16: 565, 1954.

reactions, thus far, have been mild and not disturbing. Second, x-ray visualization of the ducts was not obtained in six patients. Two of these had free air in the bile ducts due to previous surgery but showed normal liver function; the other four had abnormal liver function, with or without clinical evidence of intermittent jaundice, cirrhosis, or a draining T tube in the common duct. In one patient with an elevated bilirubin level the ducts were poorly visualized. It is disappointing to find poor visualization or nonvisualization of the ducts in 6 out of the 21 patients studied, but it is reasonable to expect that with improvement in techniques the percentage of adequate visualization will be raised, if serious liver damage is absent. The common and terminal portions of the right and left hepatic ducts were well visualized in 15 patients, but the smaller intrahepatic ducts were not visualized except in one patient of the control group. If the small hepatic ducts could be visualized, the value of the examination would be enhanced for the possible diagnosis of intrahepatic abscesses and primary and secondary liver tumors.

From the studies, it is believed that the indications for the examination are: (1) complaints following cholecystectomy, (2) suspected common duct stone, (3) normal cholecystogram by other methods but persistent symptoms, (4) inability to take or intolerance to oral preparations, and (5) need for rapid diagnosis. Although the examination is time consuming and must be made under the constant supervision of a physician, sodium iodipamide now has a place in the roentgenologic study of the pathology of the biliary ducts. For the time being, the use of this compound is not advisable in patients who have severe liver disease, sensitivity to iodine, or toxic diffuse goiter (Graves' disease). This study shows, however, that the procedure is safe and can be done on nonhospitalized patients. The results of these studies with sodium iodipamide appear encouraging; the preparation is useful and should be given further trial in a large number of cases.

SUMMARY

Sodium iodipamide (Cholografin), the disodium salt of N,N'-adipyl-bis (3 amino-2,4,6-triiodobenzoic acid), a new roentgenologic contrast medium, was used to study the biliary duct system in 21 patients. Adequate roentgenologic visualization of the large bile ducts was obtained in 15 of the 21 patients after intravenous injection of the material. The six patients with nonvisualization of the ducts had either severe hepatic dysfunction or air in the ducts due to previous surgery. No serious reactions developed following slow injection of the compound. The low toxicity of the compound was confirmed by means of serial tests of liver function, which did not change after injection of the preparation. The preparation appears to be a useful adjunct for the diagnosis of biliary diseases and especially for intraductal pathology.

1525 E. 53rd St. (15) (Dr. Heydemann).

OCCULT CARCINOMA OF THE PROSTATE

CLINICAL AND THERAPEUTIC STUDY OF EIGHTY-THREE CASES

Laurence F. Greene, M.D.
and
Howard B. Simon, M.D., Rochester, Minn.

At times the urologist is surprised to learn that a prostate gland with enlargement that he had considered to be benign is found to be carcinomatous by histological study following prostatectomy. The therapeutic problem thus presented is one concerning which a divergence of opinion exists. One school of thought suggests that radical perineal prostatectomy should be performed in such cases, whereas the other believes that the conservative prostatectomy already performed, the one by which the diagnosis of occult carcinoma was established, is sufficient. Thus Brendler stated that "it becomes mandatory at this time, and until convincing evidence to the contrary be submitted, that the patient with occult prostatic cancer be given the benefit of radical prostatectomy, providing, of course, that he be a suitable candidate from the standpoint of physical condition and life expectancy."[1] The Hinmans supported this contention and cited results in five patients so treated and followed for more than five years.[2] An average survival period of 68 months was noted in these patients, in contrast to an average survival period of 37 months in nine patients treated by prostatic resection alone. A similar opinion has been expressed by Goodwin[3] and Harrison and Poutasse.[4]

Nesbit and Baum,[5] on the other hand, stated: "Are we justified in subjecting patients with occult prostatic cancer to the operative risk and the morbidity often attendant on radical perineal prostatectomy in the light o present available survival statistics? . . . The results o conservative management offer a challenge which th advocates of radical prostatic surgery must at least mee

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From the Section of Urology, Mayo Clinic and Mayo Foundation (Dr. Greene) and Fellow in Urology, Mayo Foundation (Dr. Simon).

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The Mayo Foundation is a part of the Graduate School of the University of Minnesota.

The pathological examinations were done by Dr. John R. McDonald, Professor of Pathology, Mayo Foundation.

[1] Brendler, H.: Evaluation of Current Treatment of Prostatic Cancer, J. Urol. 68:734-743 (Oct.) 1952.

[2] Hinman, F., Jr., and Hinman, F.: Occult Prostatic Carcinoma Diagnosed upon Transurethral Resection, J. Urol. 62:723-729 (Nov.) 1949.

[3] Goodwin, W. E.: Radical Prostatectomy After Previous Prostatic Surgery: Technical Problems Encountered in Treatment of Occult Prostatic Carcinoma, J. A. M. A. 148:799-803 (March 8) 1952.

[4] Harrison, J. H., and Poutasse, E. F.: Management of Carcinoma of the Prostate: Study of Hormonal and Surgical Therapy in 100 Patients, Am. J. Med. 11:55-66 (July) 1951.

[5] Nesbit, R. M., and Baum, W. C.: Management of Occult Prostatic Carcinoma, J. Urol. 65:890-894 (May) 1951.

and preferably improve upon before the urologist can advise such a procedure for the treatment of unsuspected prostatic malignancy." These authors reported their study of 42 patients with occult prostatic carcinoma. They noted that 26 patients were living without evidence of recurrence, 65% of whom had been followed three years or longer, while 2 patients had died of prostatic cancer and 14 had died of other causes. They concluded, therefore, that conservative management is indicated in the treatment of occult prostatic carcinoma. Similarly, Labess[6] reported that of 33 patients with occult carcinoma treated by suprapubic enucleation and followed for more than five years, 26 (85%) survived five years or more.

INCIDENCE

Reports concerning the clinical incidence of occult carcinoma of the prostate are few. Young[7] reported the incidence of carcinoma to be nearly 11% in 4,295 prostates removed surgically; of these carcinomas, 76 or 16% were unsuspected prior to operation. Smith and Woodruff[8] found occult carcinoma in 62 of 648 cases of carcinoma of the prostate, an incidence of approximately 9%.

PURPOSE OF PRESENT STUDY

The purpose of this study was to determine the course of patients with occult prostatic carcinoma treated by transurethral resection; adjuvant forms of therapy, as will be described later, also were employed. The cases of occult carcinoma of the prostate that comprise this study satisfied the following criteria: 1. Each patient was examined by urologic and medical consultants, and in each instance the prostatic enlargement, noted by digital-rectal examination, was considered to be benign. 2. Metastatic malignancy was not suspected in preoperative roentgenograms. 3. A suspicion of malignancy was not raised during the course of transurethral prostatic resection. Thus, the presence of malignancy was unsuspected in each case prior to receipt of the pathologist's report. Clinical records of 2,090 patients with prostatic carcinoma treated during the 15 year period of 1934 to 1947 inclusive were studied, and 83 cases fulfilled the criteria mentioned above.

AGE DISTRIBUTION OF PATIENTS AND SIZE OF PROSTATE

The age distribution of the patients is shown below. The average age of the group was 68 years; the youngest patient was 51 years of age and the oldest 84. The great majority of patients (about 85%) were in the seventh and eighth decades of life at the time of diagnosis. The estimates of the size of the prostates, as determined by digital-rectal palpation and graded on the basis of 1 to 4, were: grade 1, 28 patients (33.7%); grade 2, 42 patients (50.6%); and grade 3, 13 patients (15.7%). None of the 83 patients had prostates of a size to be classified as grade 4. The actual weight of prostatic tissue removed varied from 6 to 141 gm., the average being 22 gm. The weight distribution is shown below.

Age, Yr.	Patients	
	No.	%
50-59	7	8.4
60-69	39	47.0
70-79	32	38.6
80-89	5	6.0
Total	83	100.0

Weight, Gm.	Patients	
	No.	%
0-19	39	47.0
20-39	23	27.7
40-59	14	16.9
60-79	6	7.2
80 +	1	1.2
Total	83	100.0

X-RAY AND LABORATORY FINDINGS

Preoperative plain roentgenograms of the urinary tract were made in 77 of the 83 cases, and roentgenograms of the chest were secured in all cases. In each case the roentgenogram was negative for evidence of metastatic bone lesions. Inasmuch as prostatic malignancy was not suspected, preoperative determinations of serum phosphatase were not made; however, determinations of acid and alkaline serum phosphatase were made during the immediate postoperative period in 15 cases, and in each case the values were normal.

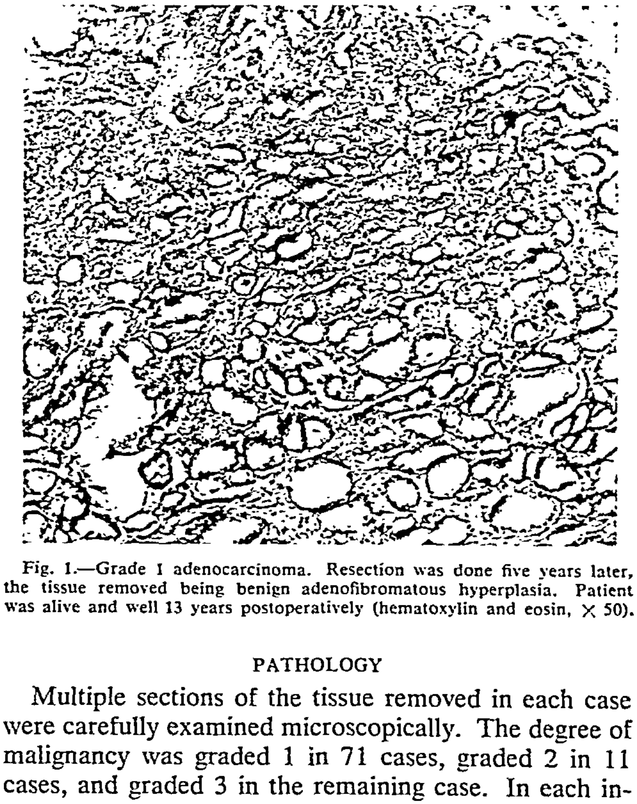

Fig. 1.—Grade I adenocarcinoma. Resection was done five years later, the tissue removed being benign adenofibromatous hyperplasia. Patient was alive and well 13 years postoperatively (hematoxylin and eosin, × 50).

PATHOLOGY

Multiple sections of the tissue removed in each case were carefully examined microscopically. The degree of malignancy was graded 1 in 71 cases, graded 2 in 11 cases, and graded 3 in the remaining case. In each instance the neoplasm was considered to be adenocarcinoma (fig. 1, 2, and 3). The diagnosis of adenocarcinoma of the prostate, grade 1, is sometimes considered a diagnosis of equivocation; however, fulfillment of the following three criteria would seem to permit of an unequivocal diagnosis[9]: 1. The prostatic acinus acquires a small lumen. 2. The lining epithelium loses its papillary infoldings. 3. Lipid appears in the cytoplasm. Support for this viewpoint is gained from the studies of Kahler, who noted perineural lymphatic involvement in 87% of the cases of adenocarcinoma, grade 1. Evidence of metastasis was noted in 51% of such cases recognized grossly at autopsy.

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[6] Labess, M.: Occult Carcinoma in Clinically Benign Hypertrophy of the Prostate: A Pathological and Clinical Study, J. Urol. 68:893-896 (Dec.) 1952.

[7] Young, H. H.: The Ultimate Results in the Treatment of Carcinoma of the Prostate by the Radical Removal of the Prostate, Vesical Neck and Seminal Vesicles, J. Urol. 29:531-543 (May) 1933.

[8] Smith, G. G., and Woodruff, L. M.: The Development of Cancer of the Prostate After Subtotal Prostatectomy, J. Urol. 63:1077-1080 (June) 1950.

[9] Culp, O. S., and McDonald, J. R.: Importance of Frozen Sections in Evaluating Prostatic Nodules, J. Urol. 72:443-449 (Sept.) 1954.

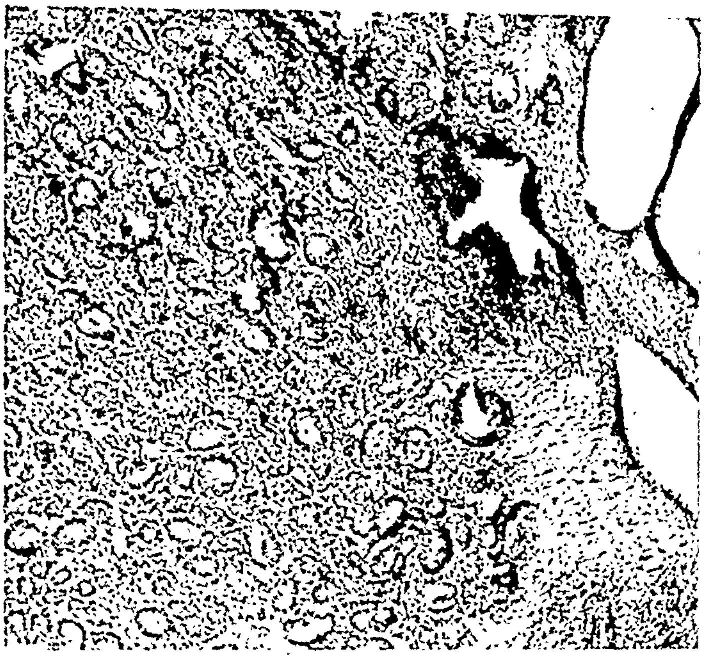

Fig. 2.—Grade 1 adenocarcinoma. Patient had no evidence of recurrence or metastasis at follow-up examination 7 years after the operation and was alive and well 11 years postoperatively (hematoxylin and eosin, × 50).

Certain changes in prostatic epithelium may be confused with adenocarcinoma. One of these changes is metaplasia, or squamatization, of the prostate. In this condition, the epithelium of the prostate gland becomes hyperplastic in the process of repair of damaged ducts and acini around an infarct or at the edge of the necrosis following transurethral prostatic resection. This hyperplastic epithelium has, in the past, been confused with carcinoma, but it is recognized readily in that frequently the islands of epithelium do not have a lumen, or, if they do have a lumen, there is an absence of fat in the cytoplasm. We believe that the histological diagnosis of adenocarcinoma, grade 1, if applied conservatively, is subject to little error. Some of the carcinomas in this series were microscopic in size, and most of the lesions were found in association with adenofibromatous hyperplasia; the latter finding is in accord with those of Rich[10] and Andrews.[11]

TREATMENT AND RESULTS

The forms of therapy employed in these 83 patients were: transurethral resection and diethylstilbestrol, 43 patients; transurethral resection, 37; transurethral resection and orchiectomy, one; transurethral resection and roentgen therapy, one; and transurethral resection, diethylstilbestrol, and roentgen therapy, one. It will be noted that transurethral resection and administration of diethylstilbestrol were employed in 43 cases. In this group, diethylstilbestrol therapy was instituted during the postoperative period in 39 instances, while the remaining four patients did not receive hormonal therapy until two to seven years later. The patient who underwent orchiectomy did so four years after prostatic resection. One patient, given roentgen therapy during the postoperative period, received diethylstilbestrol nine years later. Thus, the majority of patients were treated either by transurethral resection alone or by resection supplemented with diethylstilbestrol therapy.

Observed Survival Rates Compared with Expected Survival Rates (Normal Population)

		Lived Beyond Indicated Period		
Period, Yr.	Patients	No.	Survival Rate, % †	Expected Survival Rate for Normal Population Aged 68 to 69, % *
5	82	58	70.7	75.4
10	33	13	39.4	48.7

* United States Life Tables (white males, 1940).[12]

† Inquiry as of Jan. 1, 1953. The 5 yr. group includes those patients operated on in 1947 or earlier; the 10 yr. group includes those operated on in 1942 or earlier.

Survival Rate.—It was possible to reexamine or correspond with 82 of the 83 patients who comprised our study; this permitted us to collect data concerning survival for 82 patients followed 5 years or more and 33 patients followed 10 years or more. The 5-year and 10-year survival rates are shown in the table. This table also includes the expected survival rates for the normal population at age 68 to 69 years[12] (the average age of the patients included in our study). It will be noted that the survival rates for our patients compare favorably with survival rates for the normal population. This comparison tends to emphasize the relatively low order of malignancy of occult prostatic carcinoma.

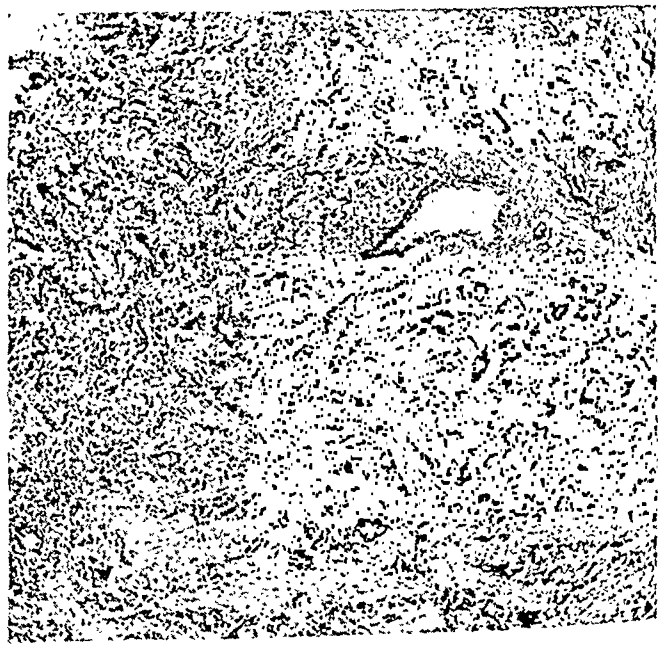

Fig. 3.—Grade 3 adenocarcinoma. Patient died three years postoperatively, at age of 74, but with no evidence of recurrence prior to death (hematoxylin and eosin, × 50).

State of Health and Cause of Death.—In addition to determining the number of years the patients survived, we sought to determine the state of their health during these years and, if possible, the cause of death. We wished to learn whether the patients survived comfortably or whether they suffered from prostatic carcinoma. We believe we have valid information in this respect concerning 67 of the 82 patients in the study. This information was obtained partly by examinations conducted at the time of return visits of the patients to the clinic and partly by questionnaires. The difficulty of adequate appraisal by means of questionnaires is acknowledged, but we believe that the specificity of our questions and the nature of the responses permit valid deductions concerning the state of health and causes of death of 67 patients.

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[10] Rich, A. R.: On the Frequency of Occurrence of Occult Carcinoma of the Prostate, J. Urol. 33:215-223 (March) 1935.

[11] Andrews, G. S.: Latent Carcinoma of the Prostate, J. Clin. Path. 2:197-208 (Aug.) 1949.

[12] Life Table for Total Males in the United States: 1939-1941, in Greville, T. N. E.: Sixteenth Census of the United States: 1940, United States Life Tables and Actuarial Tables, 1939-1941, U. S. Department of Commerce, Bureau of the Census, 1946, pp. 28-29.

Fifty-five of these 67 patients (82%) did not experience further symptoms that we considered to be due to prostatic carcinoma, and the cause of death of those patients deceased at the time of this study (22 patients) was not considered to be prostatic carcinoma. The following information pertains to these 55 patients. Twenty-five patients were reexamined at the clinic on subsequent occasions and prostatic malignancy, local or metastatic, was not detected. Six patients underwent a second transurethral prostatic resection or suprapubic prostatectomy because of recurrent urinary obstructive symptoms one to eight years after the initial resection; in each instance, microscopic examination of the tissue removed failed to disclose carcinoma. Forty-two patients survived five years or more. A 10-year follow-up was possible for 19 patients, and 9 lived 10 years or more. Twelve of the 67 patients suffered ill health and recurrent urinary obstructive symptoms, and it is highly probable that death of the patients deceased at the time of this study (7 patients) was due to prostatic carcinoma. The following information pertains to these 12 patients. Seven patients returned to the clinic for reexamination, and a diagnosis of local or metastatic carcinoma of the prostate was made. Whether the recurrent urinary obstructive symptoms suffered by the remaining five patients were attributable to prostatic carcinoma can only be conjectured inasmuch as they did not return for reexamination. It is possible that the recurrent prostatism was due to regrowth or residual benign prostatic tissue. Ten patients survived five years or more. A 10-year follow-up was possible for eight patients, and four lived 10 years or more.

Thus, from the standpoint of health and well-being, 55 of 67 patients (82%) enjoyed good health postoperatively and did not experience symptoms that could be attributed to prostatic malignancy. Furthermore, the cause of death of the patients in this group who were deceased at the time of this study was not prostatic malignancy. Finally, the longevity of those patients who continued to experience symptoms that were definitely or possibly related to prostatic malignancy was appreciable. These data likewise suggest the relatively low order of malignancy of occult prostatic carcinoma.

Effect of Postoperative Therapy with Diethylstilbestrol on Survival.—Survival data on patients treated by resection alone (37 patients) were compared with similar data on patients treated by resection and immediate diethylstilbestrol therapy (39 patients). Comparative data suggest that diethylstilbestrol therapy, instituted during the postoperative period, neither increases survival nor decreases morbidity. Thus, 73% of patients treated by resection alone survived five years, whereas 67% of patients treated by resection and diethylstilbestrol survived five years. (The number of patients in these groups followed 10 years or more is too small for statistical studies.) In view of the slight degree of anaplasia of the carcinomas in this study, such results from hormonal therapy are to be expected.

COMMENT

This study was undertaken to give information concerning the prognosis, in respect to both survival and morbidity, for patients with occult prostatic carcinoma. Our data indicate that survival rates for such patients treated by transurethral resection (alone or with diethylstilbestrol) closely approach normal survival rates. The table indicates that expectancy for 5 year survival is about 95% of normal and expectancy for 10 year survival is about 85% of normal. The prognosis concerning morbidity is equally encouraging. At the time this study was made, approximately 80% of the patients remained free of symptoms that could be attributed to carcinoma; the cause of death of the deceased patients was not prostatic carcinoma. Approximately 10% of patients had recurrent urinary obstructive symptoms. Our information was not sufficient to determine whether this was the result of prostatic carcinoma, secondary to an inadequate resection, or due to recurrence of benign prostatic hyperplasia. Finally about 10% of patients subsequently had symptoms and findings of prostatic carcinoma, and it is highly probable that death of the patients deceased at the time of this study was the result of prostatic carcinoma.

The fact that 10 to 20% of patients developed symptoms that were definitely or possibly the result of prostatic carcinoma might be considered an indication that transurethral resection is inadequate therapy. It cannot be denied that some of these patients might have been cured if radical prostatectomy had been performed. Unfortunately, we know of no criteria that will indicate which patients with occult carcinoma require radical prostatectomy. It should be pointed out, however, that survival of patients in our series whose clinical course was not satisfactory (20%) was, nevertheless, appreciable. Thus, in this group, the average survival of the patients deceased at the time of our study was six years, while those patients still living had survived an average of eight years.

It is our opinion that three factors are largely responsible for the good prognosis for patients with occult prostatic carcinoma. These are grade (Broders' method), size, and biological potential of the carcinoma. It will be noted that with but one exception all the carcinomas in this study were low grade, that is, grade 1 or 2 (graded on the basis of 1 to 4, in which grade 1 is the least malignant and grade 4 the most malignant). Indeed, 85% of the carcinomas in this series were graded 1. Thompson[13] has already established a direct correlation between the grade of carcinoma and prognosis and has pointed out that 60% of patients with carcinoma, grade 1, irrespective of the size or extent of the lesion, survive five years or more.

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[13] Thompson, G. J.: Carcinoma of the Prostate, Urologists' Correspondence Club, April 15, 1954.

In many instances in our series, the carcinoma was microscopic in size, and it is possible that it was excised completely by transurethral resection. Thus, it was not unusual for the pathologist to report the presence of a microscopic area of carcinoma in one section of tissue and its absence in numerous other sections that were made for the express purpose of detecting carcinoma. The records of six patients indicate that the carcinoma may be excised completely by transurethral resection. These patients underwent resection and a diagnosis of occult prostatic carcinoma was established; a subsequent resection or suprapubic prostatectomy performed one to eight years later because of recurrent urinary obstruction failed to disclose carcinoma. Complete excision of carcinoma by conservative prostatectomy has been reported by Goodwin,[3] Hinman,[2] and Jewett.[14] Goodwin reported that radical prostatectomy was performed in 14 cases after a diagnosis of carcinoma had been established by simple perineal, suprapubic, retropubic, or transurethral prostatectomy. In five of these cases, residual carcinoma could not be detected.

Finally, our study indicates that the biological potential of occult prostatic carcinoma may be of lower magnitude than those carcinomas that can be detected by rectal palpation. It is possible that occult carcinoma originates in periurethral glands.[15] Certainly there is no reason why the periurethral glandular epithelium should be immune to malignant change, and such an hypothesis would explain the apparent complete removal of malignancy by simple prostatectomy cited previously. Kahler has pointed out that carcinoma originates at a site other than the posterior lamella in 54% of cases. It is conceivable that carcinoma arising from periurethral glands or prostatic sites other than the posterior lamella are associated with a pattern or rate of cellular activity different from those that originate in the posterior lamella of the prostate gland and that are commonly recognized by digital-rectal examination.

SUMMARY AND CONCLUSIONS

The records of slightly more than 2,000 cases of carcinoma of the prostate gland were reviewed, and 83 cases of occult carcinoma were found in which the treatment consisted of transurethral prostatic resection. The expectancy for 5 year and 10 year survival was approximately 95 and 85% of normal respectively. Some 80% of patients remained free of symptoms that could be attributed to prostatic carcinoma. The favorable prognosis in respect to survival and morbidity is attributed to: (1) low grade of the carcinoma, (2) small size of the carcinoma, with the possibility in some cases of its total removal by resection, and (3) lower magnitude of malignancy of occult carcinoma related possibly to its origin in periurethral glands. Diethylstilbestrol therapy does not influence the prognosis favorably. Finally, in view of the statistics presented, the advisability of radical prostatectomy after prostatic resection has disclosed occult carcinoma is questioned.

200 First St. S. W. (Dr. Greene).

[14] Jewett, H. J.: Radical Perineal Prostatectomy for Carcinoma: An Analysis of Cases at Johns Hopkins Hospital, 1904-1954, J. A. M. A. **156**: 1039-1041 (Nov. 13) 1954.

[15] Dossot, R.: Cancer of Prostate: Its Origin and Extension, J. Urol. **23**: 217-245 (Feb.) 1930.

FEMORAL ARTERIOGRAPHY IN DIAGNOSIS OF SEGMENTAL ARTERIOSCLEROSIS OBLITERANS

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and
Alfred W. Humphries, M.D., Cleveland

Femoral arteriography has taken on new diagnostic importance with the advent of the use of arterial implantations in the treatment of selected cases of segmental arteriosclerosis obliterans. Although the history and physical examination alone will disclose the presence of peripheral vascular disease, these must be supplemented by arteriography to disclose the special condition of segmental occlusion. The frequency of segmental occlusion in arteriosclerosis obliterans makes arteriography an indispensable component of the clinical evaluation of the disease. The purpose of this paper is to describe a technique of femoral arteriography that has provided uniformly good results, to summarize the findings of 103 consecutive femoral arteriograms of 76 patients, and to correlate these findings with certain clinical data and prognoses.

TECHNIQUE

The technique of arteriography now employed at the Cleveland Clinic has evolved from three main objectives: (1) safety to the patient, (2) continuous visualization of the arterial tree, and (3) simplicity of equipment. Perhaps the most important single departure from the usual technique is injection by means of arterial catheterization. In the past, femoral catheterization primarily was used for retrograde aortography. Farinas [1] was a pioneer in this field, using a rubber ureteral catheter, which he inserted through a trocar. More recently, Peirce [2] employed polyethylene tubing.

Arteriographic examination is performed in the operating room. After cleansing of the femoral triangle area, a 14 gauge needle is directed proximally into the femoral artery (fig. 1). The obturator is removed, and

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From the departments of roentgenology, cardiovascular disease, and orthopedic surgery, the Cleveland Clinic Foundation, and the Frank E. Bunts Educational Institute.

[1] Farinas, P. L.: New Technic for Arteriographic Examination of Abdominal Aorta and Its Branches, Am. J. Roentgenol. **46**: 641, 1941.

[2] Peirce, E. C., II: Percutaneous Femoral Artery Catheterization in Man with Special Reference to Aortography, Surg., Gynec. & Obst. **93**: 56, 1951.

a plastic catheter is inserted through the needle until the tube extends into the common femoral artery for a distance of 2 to 3 in. (5 to 8 cm.). The needle is then withdrawn over the catheter. Injection by catheter possesses several advantages: It minimizes local trauma, minimizes the danger of extravasation, and minimizes the danger of exposure. The sharp-pointed needle does not remain in the lumen, where it can come in contact with the vessel wall. Movement of the needle, particularly during forceful injection, has been considered a prime source of local trauma. The catheter is threaded well into the artery, thus minimizing the danger of extravasation that results from incorrect placement of the needle. The added length of the catheter allows a greater distance between the hand of the injector with the syringe and the roentgen ray field, thus minimizing the exposure. A check with a dosimeter in our cases revealed an average exposure of only 20 milliroentgens to the hand of the injector. This catheter technique almost completely eliminates the major local complications of hemorrhage, extravasation, and local trauma and allows for percutaneous injection with relative safety.

Initially, iodopyracet (Diodrast) was used as the contrast medium, but at present, sodium acetrizoate (Urokon) is preferred. Twenty-five cubic centimeters of 50% sodium acetrizoate is used. This solution is considered to be the maximum safe concentration for peripheral arteriography. (We agree with Lindbom [3] that only in the aorta can 70% sodium acetrizoate be tolerated.) To allow for filling of the collaterals, the operator slowly injects the first 15 cc. during a 10 second period. The remaining 10 cc. is given as rapidly as possible, and the arteriogram usually is obtained simultaneously with the completion of injection. Exposure may be delayed in certain instances, as in the study of vascular malformations to obtain a venous phase. We keep the equipment simple by omitting the use of a pressure control injection apparatus, which we believe is unnecessary.

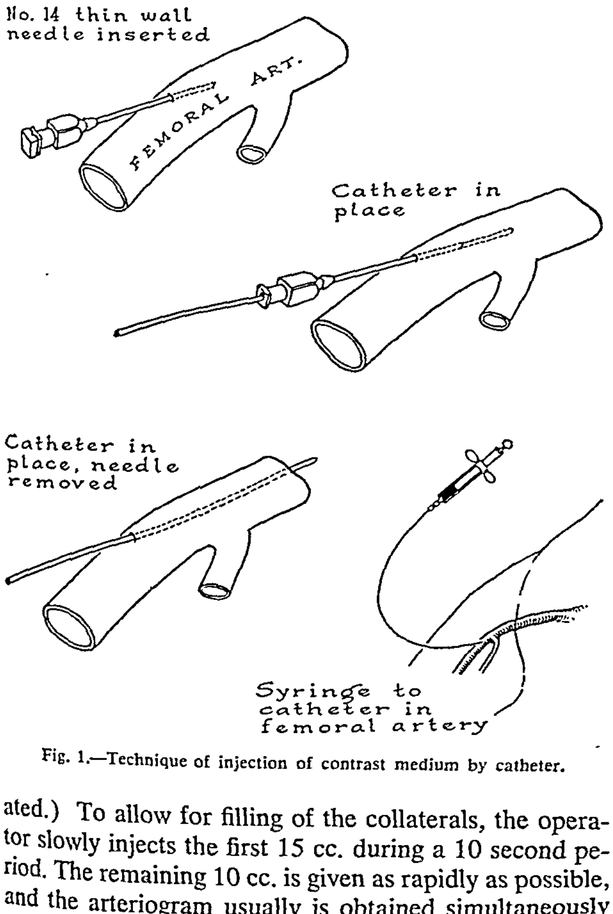
No. 14 thin wall needle inserted
FEMORAL ART.
Catheter in place
Catheter in place, needle removed
Syringe to catheter in femoral artery

Fig. 1.—Technique of injection of contrast medium by catheter.

The only special piece of apparatus that is required is a 14 by 36 in. cassette with maximum speed screens.

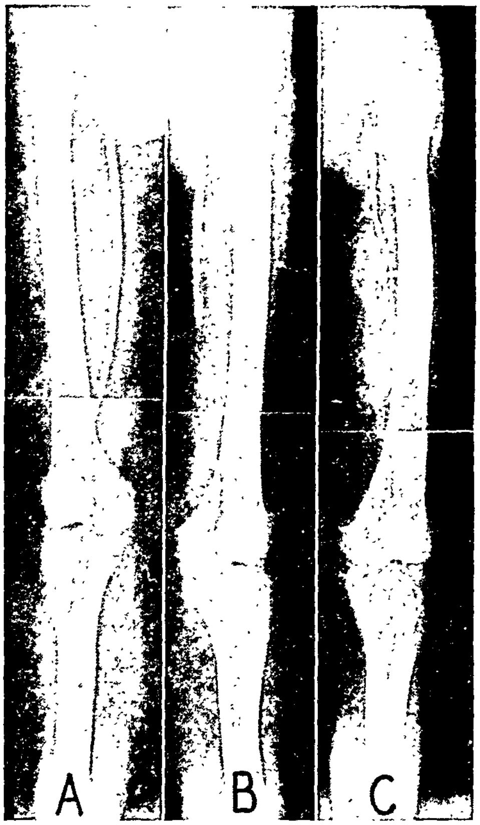

Fig. 2.—Arteriographs (*A, B*) of a 57-year-old man with arteriosclerosis obliterans with bilateral intermittent claudication and (*C*) of a 73-year-old man with arteriosclerosis obliterans with claudication, rest pain, and a small ischemic ulcer. *A*, local intimal disease of the lower superficial femoral artery of the right limb. *B*, short segmental occlusion of the superficial femoral artery of the left limb, with good refilling distally. A symmetrical tendency is apparent, the arterial tree being free of disease except for the region of Hunter's canal. *C*, occlusion of the superficial femoral artery of the left limb from its bifurcation, without refilling. Collateral circulation is inadequate, and multiple small vessels from the profunda extend below the knee.

The use of a single 14 by 36 in. roentgen ray film requiring special darkroom handling is unnecessary, since two regular 14 by 17 in. films can be butted together within the special cassette. The two films provide uninterrupted visualization of the arterial tree, both of the upper leg and of the lower leg, which is highly important for proper evaluation of the disease. To facilitate changing of the cassette, a wood and Masonite tunnel is placed under the limb to be examined. It has not been found necessary to use a Bucky frame. A thin sheet of aluminum, 0.041 in. thick, is placed over the cassette in the tunnel to reduce the scattered radiation. A portable unit with a capacity of 100 ma. is used. The tube is raised to a maximum height of 39 in. above the film, is centered over the femoral triangle, and is tilted 10 degrees toward the feet. An aluminum wedge from 0 to 8 mm. in thickness is placed under the tube port to compensate for the

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3. Lindbom, A.: Arteriosclerosis and *Arterial* Thrombosis in the Lower Limb: Roentgenological Study, Acta radiol., supp. 80, pp. 1-80, 1950.

distally diminishing thickness of the limb. The resulting roentgenogram is of fairly uniform density.

For arteriography, the patient is lightly anesthetized with thiopental (Pentothal) sodium supplemented by succinylcholine chloride. The latter drug has a curare-like action obtained by muscle depolarization, which permits the dosage of thiopental to be kept at a minimum. Succinylcholine chloride is administered immediately preceding the injection of the sodium acetrizoate. Without general anesthesia, not only is there pain and discomfort for the patient but the involuntary motion of the patient prevents the obtaining of satisfactory radiograms. While the film is being rapidly developed and inspected, the catheter is left in place. Thus, if the film proves to be unsatisfactory, a repeat study can be performed. After the catheter has been removed, manual pressure is maintained over the area for two to three minutes. With this technique, a total of 129 individual arteriograms has been obtained; there have been no significant complications, and in no case did the procedure appear to aggravate any existing ischemia.

TABLE 1.—*Arteriographic Findings in 103 Limbs*

		Disease Group						Level of Filling			
	No. Limbs Studied	1. Intimal		2. Occlusion With Refilling		3. Occlusion Without Refilling		Below Tibial Artery		Above Tibial Artery	
Condition		No.	%	No.	%	No.	%	No.	%	No.	%
Claudication	67	19	28	42	63	6	9	63	94	4	6
Ischemia	36	9	25	10	28	17	47	19	53	17	47
Total	103	28	27	52	51	23	22	82	80	21	20

TABLE 2.—*Clinical Data in Seventy-Six Patients Having Arteriosclerosis Obliterans*

		Age, Yr.		Limbs Studied by Arteriography		Limbs of Diabetic Patients						Limbs Amputated (All from Ischemic Group)		Limbs Amputated from Diabetic Patients	
						Total		With Claudication		With Ischemia					
Sex	No. of Patients	Average	Range	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	64	58.7	36-75	89	86	13 of 89	15	7 of 61	11	6 of 28	21	7 of 89	8	4 of 7	57
Female	12	60.4	48-76	11	14	7 of 14	50	1 of 6	16	6 of 8	75	5 of 14	36	4 of 5	80
Total	76	59	36-76	103	100	20 of 103	19	8 of 67	12	12 of 36	33	12 of 103	12	8 of 12	67

RESULTS

In this series, 103 consecutive femoral arteriograms revealing arteriosclerosis obliterans in a total of 76 patients have been studied. For 27 patients, both extremities were examined, and, for the remaining 49, one extremity was examined. In many of the bilateral studies, the clinical and arteriographic findings were somewhat different in the two limbs. Because of this variation, each arteriogram is separately considered in our report of the findings. A symmetrical tendency was clearly apparent; however, in no case was there a gross discrepancy when bilateral arteriograms were obtained.

The pathological arteriographic findings have been classified into three groups: intimal disease only, occlusion with refilling, and occlusion without refilling. In intimal disease (group 1) there are varying degrees of narrowing of the lumen of the vessel, ranging from minimal irregularity to incomplete block. The continuity of the vessel is maintained, however, and total occlusion does not occur. Collateral circulation usually is scanty, no matter how extensive and diffuse are the intimal changes (fig. 2*A*). In occlusion with refilling (group 2) a segment of the vessel is completely blocked, but there is good collateral circulation that bypasses the defect. Eventually there is filling of the vessel distal to the occlusion (fig. 2*B*). In occlusion without refilling (group 3) there is complete block of the vessel with collateral circulation extending a variable distance below the block. The parent vessel never is refilled. This is the severest form of arterial disease (fig. 2*C*). In the last two groups a varying degree of intimal disease usually is present elsewhere in the arterial tree, but the occlusion is the dominant feature. On the basis of this classification, the findings in our series are analyzed in table 1. The presence or absence of claudication and/or ischemia also were taken into consideration. An ischemic limb indicates, in addition to simple claudication, the presence of rest pain with or without ulceration and gangrene. The level of filling as seen on the arteriogram also is recorded in table 1. The pertinent clinical data are recorded in table 2.

COMMENT

The most important function of femoral arteriography as related to patients having arteriosclerosis obliterans is to identify conditions of segmental occlusion so that they may be surgically corrected. The surgical correction is accomplished by means of arterial implantation or grafting. This procedure is indicated only in certain cases of segmental block with refilling (group 2). In our series of 103 arteriograms, 52 limbs (51%) were classified in group 2. Some of those limbs, however, were not suitable for surgical treatment because of one of the following reasons: 1. The length of the block was too great. 2. Collateral circulation was good so that the only symptom was minimal claudication. 3. Extensive intimal disease was present throughout the vessels. Of the 23 limbs classified in group 3 (occlusion without refilling), in only 6 (9% of 67 cases) was claudication alone present, and in 17 (47% of 36 cases) ischemia was present (table 1). In our experience, good results with arterial grafting are obtained only in those cases in which there is adequate refilling of the vessel distal to the block.

Femoral arteriography not only aids in the selection of cases suitable for surgery but may aid in prognosis as well; for example, arteriography may be of help in determining the advisability of amputation. It is of interest to analyze those cases in which ischemic changes dictated the need for major amputation of the limb at a level proximal to the ankle. The arteriograms of the majority (7) of the 12 limbs that were amputated showed occlusion without refilling (group 3); 4 showed intimal disease alone (group 1); and one showed segmental occlusion with refilling (group 2); the patient classified in group 2 also had diabetes. Seven of the amputations were in men, at an average age of 62 years; and 5 were in women, at an average age of 61 years. An indication of the increased severity of arteriosclerosis obliterans in women is the fact that of the 14 women's limbs in which arteriography was done, 5 (36%) subsequently were amputated; whereas, of the 89 men's limbs in which arteriography was done, only 7 (8%) were amputated. There were only 12 limbs of diabetic patients in the ischemic group of 36 limbs, and yet, 8 of the 12 limbs that were amputated were from diabetic patients; thus, two-thirds of the number of limbs of diabetic patients with clinically severe disease eventually required amputation. This high proportion of diabetic patients requiring radical surgery emphasizes the extraordinary potential danger to the diabetic patient who has any degree of arterial insufficiency.

The typical amputated limb showed a complete block high in the thigh and collaterals that did not reach the popliteal bifurcation. When a deviation from this picture occurred and the arteriographic findings appeared to indicate a milder disease than that which was clinically present, the patient usually had diabetes. Almost without exception, segmental block in the nondiabetic patient is a guarantee against amputation.

The use of the arteriographic findings as a guide to the optimum level of amputation was first described by Veal[4] in 1935. He reported 23 amputations for peripheral vascular disease performed below the knee, of which only 4 later needed revision. Evaluation was based on findings on a single 14 by 17 in. film showing an area that extended from the lower thigh to the midcalf. Many authors[5] consider one of the prime values of femoral arteriography to be its aid in determining the amputation site. In the present series, 8 of the 12 amputations were at the supracondylar level; 4 were performed below the knee. In these four patients, the major indication for the amputation at this site was the arteriographic finding that the level of filling of the vessel extended to the popliteal bifurcation. All four had satisfactory healing of the amputated stump. All four patients in whom the leg was amputated below the knee were diabetic. This is consistent with the previously mentioned observation that those patients having only arteriosclerosis obliterans in whom amputation was performed generally had more extensive arterial disease proximal to the knee, with a higher level of nonfilling, than did those who also had diabetes. The inadequate blood supply in the knee region necessitated supracondylar amputation. On arteriography, two of the eight patients in whom supracondylar amputation was subsequently performed showed vessel filling that extended to the lower leg; however, a lower level of amputation was impossible because both patients were diabetic and had extensive inflammatory skin changes extending well up the leg.

CONCLUSIONS

Femoral arteriography is an essential component of clinical evaluation of arteriosclerosis obliterans. It is the only procedure by which the presence of segmental occlusion can be substantiated; thus, it provides the only adequate means for selecting suitable candidates for treatment by arterial grafting. It is an important means of determining the prognosis of a limb affected by arteriosclerosis obliterans, and it is used to indicate the optimum level of amputation when that is necessary. It is an aid in making the differential diagnosis of peripheral vascular disease.

2020 E. 93rd St. (6) (Dr. LeFevre).

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Treatment of Infectious Hepatitis.—Since physical activity to the point of fatigue may be harmful, patients with acute hepatitis should be hospitalized as soon as the diagnosis is made. They should be urged to rest in bed as long as acute symptoms persist. Once they begin to feel well, regardless of the degree of jaundice, they should not be forced to stay in bed more than 1 hour after each meal. Restriction to the hospital ward, however, is essential to decrease undue activity or exertion. Allowing ad lib. activity on the ward (without any required exertion) circumvents the usual delay necessary for recuperation from the effects of prolonged rest in bed and appreciably shortens the period of hospitalization. Patients so treated may be discharged from the hospital and physical reconditioning may be undertaken after the total serum bilirubin concentration is below 1.5 mg. per 100 ml. and the bromsulphalein retention in 45 minutes below 6 per cent for a period of not less than 1 week. . . . Following discharge from the hospital it is well to follow all patients for 2 weeks with weekly physical examinations, serum bilirubin and bromsulphalein tests. Recurrent abnormalities will occur rarely and are probably indications for rehospitalization. The optimal diet in the treatment of infectious hepatitis consists of about 3,000 calories containing approximately 150 grams each of protein and fat. . . . The fat contained in meat, eggs, and dairy products is not harmful and adds greatly to the palatability of the diet. During the stage of severe anorexia the patient should be urged to take frequent small feedings. Intravenous glucose solutions should be administered when necessary to maintain a minimal caloric fluid intake. Although the forcing of a high-protein, high-fat diet . . . has been demonstrated to hasten recovery . . . critically ill patients with fulminating disease or impending hepatic coma may be harmed by excess dietary protein. In these few patients, therefore, it is probably unwise to administer more than a maintenance quantity of protein. Intravenous protein hydrolysates, plasma or blood transfusions have no place in the nutritional therapy of patients with uncomplicated infectious hepatitis.—T. C. Chalmers, M.D., R. D. Eckhardt, M.D., W. E. Reynolds, M.D., and others, The Treatment of Acute Infectious Hepatitis, *The Journal of Clinical Investigation*, July (Part 2), 1955.

Dr. Robert [illegible] Library
[illegible] Medical College

J.A.M.A., Aug. 27, 1955

CLINICAL AND ANGIOGRAPHIC CORRELATIONS IN ARTERIAL STENOSIS

Geza de Takats, M.D., Chicago

Not more than 30 years ago surgeons could do no better than amputate a gangrenous extremity after all conservative measures had failed. In the late 20's and early 30's our service began to perform two operations that saved many limbs. Embolectomies were done and are still being done in the first 6 to 10 hours after development of an acute embolism to the lower extremities.[1] Sympathectomies were advocated to enlarge the terminal capillary bed and to decrease the resistance in collateral vessels in patients with occlusion of the major arterial pathways.[2] Today, another step forward may be made by recognizing and treating arterial stenosis, the forerunner of many vascular catastrophies.[3] When peripheral embolism and thromboangiitis obliterans are excluded, both of which may produce stenosis by partial canalization of the clot, the overwhelming problem is that of the arteriosclerotic patient whose subintimal atheroma protrudes into the wall, narrows the lumen,
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nd partly on *whether the patient is walking on soft grass as against pavement, on even ground as against climbing stairs, and in the manner of a carefree saunter as against a hurried trot to catch the 8:06 a. m. train.* Since, however, there is no rest pain, there is evidence of sufficient basal blood flow that only becomes inadequate on increased demand from the contracting muscle. The active muscle may abstract almost all the oxygen brought to it in the arterial blood, and the blood flow may rise as high as 30 times its basal value.[4] For this reason, in an incomplete arterial obstruction, an arterial stenosis will first manifest itself during exercise. The difference in pulses is an objective finding of diminished inflow. Frequently, one femoral pulse is weaker than the other, and this finding, coupled with cramping in the buttocks or posterior muscles of the thigh, indicates an iliac occlusion. The two posterior tibial arteries may differ from each other, and, should the claudication be in the calf, the site of obstruction is apt to be at a femoropopliteal level. Any doubtful differences can be confirmed by a study of the patient after exercise, when an existing pulse may disappear or the needle of an oscillometer may stop swinging (fig. 1). The oscillometer may also give an idea of existing collateral circulation and the presence or absence of any total occlusion of the main channel. The pulsations may be intense and rapid, although diminished in size, indicating narrowing of the vessel, or they may show a slow worm-like movement, which means that a delayed pulse appears through narrow, elongated collateral pathways. The site of abnormal oscillations may help to locate the segmental stenosis.

There are certain sites of predilection in nonembolic arterial stenoses. They are not at bifurcations as are the embolic ones but occur in the common iliacs (as emphasized early by Palma [5]) just below the bifurcation of the aorta; in the hypogastric artery, a short distance from its origin; at the upper end of Hunter's canal (also emphasized by Palma [5]); and proximal to the tendinous arch of the soleus muscle in the popliteal fossa. A mechanical factor in the localization of these atherom plaques is unmistakable. Later, of course, a thron mass may pile up above or below these obstructions, at operation the naked eye can usually detect the starting point of an ascending thrombosis. It is quite possible that the lipid metabolism is the basic underlying factor of atheromatosis,[6] but the mechanical effect on the vessel wall at typical areas of strain is quite evident.

The hemodynamic effect of such a segmental stenosis is variable. It may produce a poststenotic dilatation, the mechanism of which has been thoroughly investigated by Emile Holman,[7] or, because of the marked fall in intraluminal pressure when the stenosis closes more than 75% of the lumen,[8] a thrombosis may occur distally that makes efficient collateral circulation impossible. The wall of the artery distal to a partial occlusion or ligature shows proliferative changes leading to further stenosis or obliteration. Vasomotor reflexes become active.[9] At

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additional illustrations could not

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any event, the stenotic arterial segment is a source of danger. The roentgenologic examination accurately visualizes and localizes such a segment. The arteriograms presented below, together with brief clinical abstracts of the cases, illustrate the different types of occlusion found in common iliac stenosis, which we now frequently encounter.

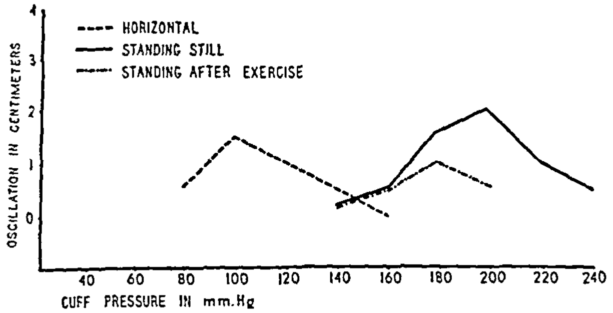

Fig. 1.—Oscillometric curves of 42-year-old male with mild claudication in the left thigh and calf in horizontal and standing positions and immediately after exercise. All pulses were palpable although slightly diminished. On standing, the oscillometric curve is higher, with a shift to the right, indicating increased resistance. (This postural vasoconstriction can be overcome by sympathectomy.) After exercise, the curve becomes flatter, which is an abnormal response.

ARTERIOGRAMS

Two sites of injection are used to visualize the arterial tree of the lower extremities; that is, at the aortic level and at the common femoral level. The aortic injections may be high, just under the diaphragm, in order to see the renal and adrenal circulation, or they may be made low, when one is interested in the area of the aortic bifurcation and the two iliacs. The superficial femoral artery often becomes ragged and narrow at the upper end of Hunter's canal and may produce symptoms before it is completely occluded, although one can never be sure that some of the muscular branches in the calf are not causing the claudication. In figure 2*A* an early stenosis of the superficial femoral artery is seen, and in figure 2*B* a very short and not quite complete obliteration is visible. Stenosis (fig. 2*A*) was undisturbed, and high lumbar sympathectomy improved the patient's ability to walk without pain from two to six blocks; in the patient of figure 2*B*, who could not walk more than three blocks without pain in the left calf, lumbar sympathectomy and resection of a short arterial segment with direct anastomosis completely restored his walking ability.

In many patients the occlusion is almost complete, and a sturdy short collateral makes the arterial flow detour. Lumbar sympathectomy, resection of the occluded segment with careful saving of the collaterals, and an autogenous vein graft restores the circulation in about 80% of the patients. In the hospital with which I am affiliated, there is a large number of patients with completely occluded superficial femoral, deep femoral, and posterior tibial arteries. I shall not discuss these except to emphasize that any of the early incomplete and short stenoses may suddenly become completely occluded and cause severe ischemia or even loss of limb. In the case of one patient suffering from a popliteal atheroma, an emergency lumbar sympathectomy was done because of a sudden popliteal arterial thrombosis. No at[illegible] made to ream out the popliteal segment, and the went back to work as a hospital employee. Seven weeks later he had another episode, this time occluding a long segment of the superficial femoral artery, thus destroying an abundant collateral network just above the previous occlusion. This second ascending thrombosis resulted in his losing the extremity above the knee. Such experience and others would suggest that all acute occlusions, not only the embolic but the thrombotic ones as well, should be removed if possible, since they carry the danger of additional superimposed occlusions that may not permit the extremity to survive.

Since most physicians are now surely familiar with the full-blown picture of thrombosis at the bifurcation of the aorta, a few arteriograms can be shown of the incomplete stenosis of the iliacs or the terminal aorta itself. In the case of one patient, who complained of claudication of buttocks and thighs, with loss of erection, a large atheroma was seen at the lower end of the aorta, and both iliacs showed spots of decreased opacity indicating areas of atheroma, usually situated on the posterior wall of the artery (fig. 3). In the case of another patient, the stenosis is at the bifurcation due to plaques on the posterior surface of the aorta, extending more into the left than into the right common iliac artery. These plaques were removed by endarteriectomy (fig. 4). In another patient, whose symptoms date back to a severe fall over the left flank and buttocks, the pain in the buttocks and thigh became progressively worse. In the arteriogram of this patient an early stenosis of the right common iliac artery that was verified at operation and a

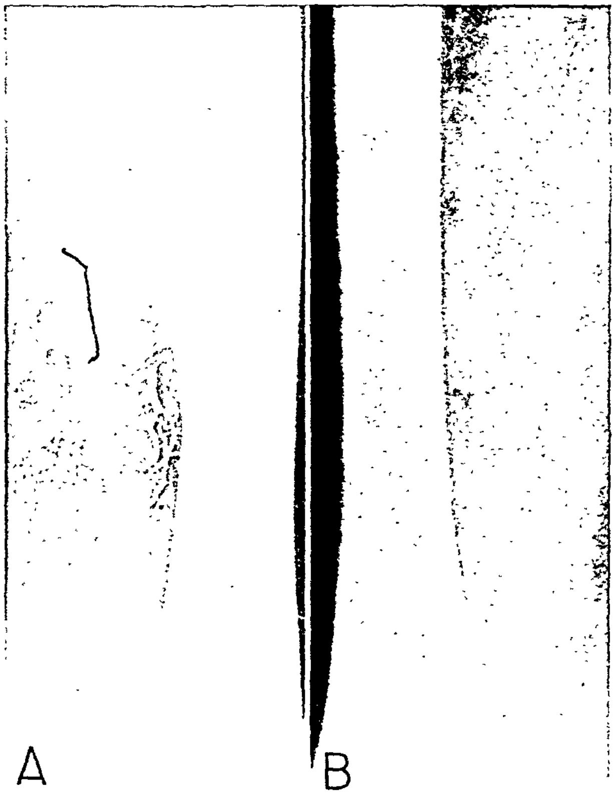

Fig. 2.—*A*, arteriogram of 55-year-old male with mild intermittent claudication and decrease in oscillations after walking. Note ragged contour of superficial femoral artery at upper end of Hunter's canal with little encroachment of lumen. *B*, arteriogram of 49-year-old man with almost complete occlusion at upper end of Hunter's canal.

complete obstruction of the left common iliac artery were seen. These were relieved by endarteriectomy, with full restoration of circulation.

MANAGEMENT OF ARTERIAL STENOSES

It is true that the majority of patients suffering from peripheral vascular stenosis come to our attention after an occlusion has taken place. Elsewhere,[10] I have outlined my attempts to revascularize an arteriosclerotic extremity in which the major arterial pathway is occluded. There are more and more cases, however, especially if we study the extremity opposite the affected one, in which clinical and roentgenologic evidence indicates an arterial stenosis. It is here where the difficulty of an optimal course of therapy arises. While certain surgeons are now resecting stenotic segments, it has been our principle to reserve arterial resection and grafting for cases of complete occlusion. The results of resecting and replacing occluded aortic and femoral segments have been reported from our institution.[11] It may well be that with increasing facility of obtaining vascular segments or plastic tubes and with increasing percentage of restoration of arterial flow, one might advocate resecting stenotic segments before they become occluded. At the present time, however, I prefer the following steps before resection and grafting are undertaken: 1. For the superficial femoral and popliteal stenosis, a lumbar sympathectomy often improves claudication. This simply means that the sum total of blood through the narrowed main pathway and the decreased collateral resistance is sufficient to meet the demand of increased flow to muscle. 2. In the case of an acute occlusion of a femoral or popliteal segment, the lumbar sympathectomy is followed by an opening of the vessel and extraction of the fresh clot and the atheromatous core around it. This must be followed by cautious heparin therapy. 3. In the case of an iliac stenosis on one or both sides, a high lumbar sympathectomy is followed by an endarteriectomy of one or both iliac vessels or of the aorta; however, if the occlusion of the aorta is complete, replacement by graft is preferable. It is to be noted that the optimal procedure for high-grade stenosis of the aortic bifurcation is debatable; however, long-term observation will determine the proper course of surgical therapy. I believe that medical therapy is useless in the treatment of arterial stenosis.

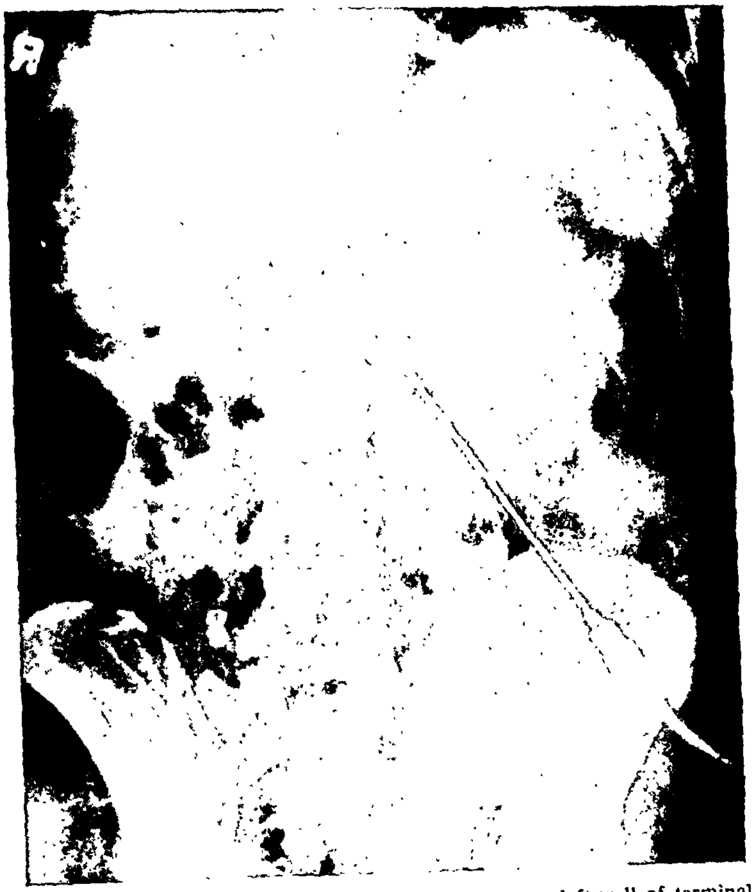

Fig. 3.—Aortogram of male with huge atheroma on left wall of terminal aorta and spots of decreased opacity in both iliac arteries due to saucers of lime on posterior surface. Endarteriectomy was done, which relieved the partial obstruction.

COMMENT

For years to come, early arterial stenosis will probably be discovered only when the contralateral extremity is studied. For years we have practiced "prophylactic" sympathectomies on patients with demonstrable obliterative vascular disease, when the more involved extremity needed sympathectomy or amputation. One would like to believe that such sympathectomies have prevented further deterioration of circulation, but, unfortunately, such is not always the case. It is true that a sympathectomized extremity will better tolerate a sudden popliteal or femoral thrombosis, but we have seen a sufficient number of patients whose second extremity became critically ischemic in spite of previous sympathectomies. For this reason it is now our custom to take a femora arteriogram or aortogram when the clinical examinatio

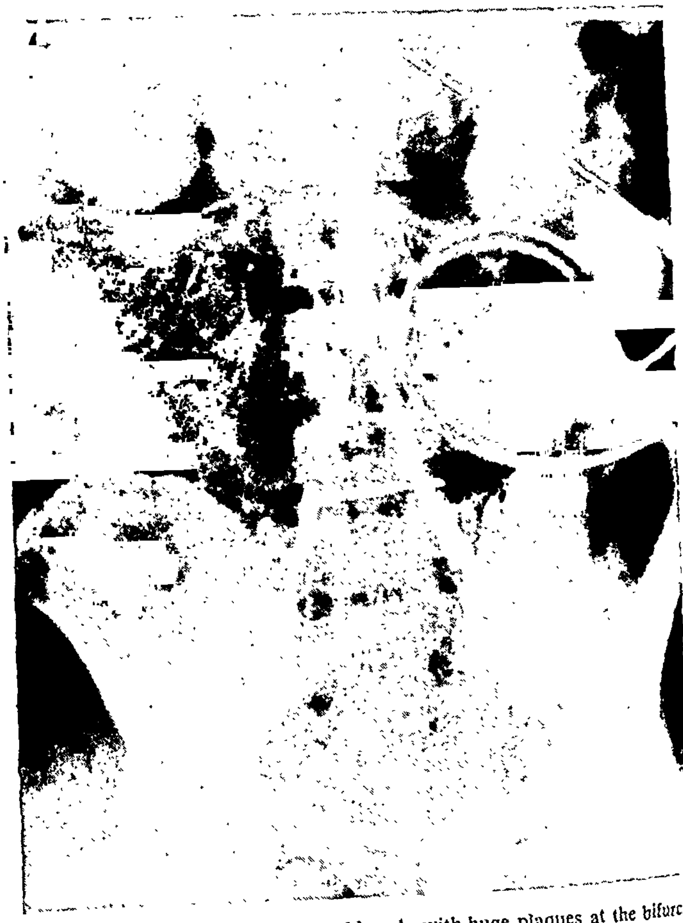

Fig. 4.—Aortogram of 47-year-old male with huge plaques at the bifurcation. Endarteriectomy removed these and restored both femoral pulses. Although this was an incomplete occlusion, his symptoms became progressively more incapacitating.

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suggests partial or total arterial occlusion. Should the arteriogram reveal an isolated segmental stenosis, an endarteriectomy must be seriously considered.

Arterial stenosis has a number of hemodynamic consequences.[12] The artery above the occlusion develops a systolic bruit as a result of churning and regurgitation. Plaques are more apt to form here and also thrombi. Distal to the stenosis one may find aneurysmal dilatation,[7] but most of the time the fall in blood pressure and the slowing of circulation will produce intimal proliferation or thrombosis. Collateral circulation does not always keep pace with arterial occlusion, and progressive ischemia calls for active surgical intervention.

SUMMARY

Arterial stenosis can be recognized by clinical and roentgenologic means before an acute vascular accident or a diffuse obliterative vascular disease develops. Preventive surgery consisting of sympathectomy and endarteriectomy are particularly indicated in those persons whose opposite extremity is the site of a critical vascular lesion leading to gangrene.

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COMPARATIVE EFFECTS OF PREDNISONE AND CORTISONE

Felix Demartini, M.D., Ralph H. Boots, M.D., Arthur I. Snyder, M.D., John Sandson, M.D.
and
Charles Ragan, M.D., New York

Prednisone (Meticorten) was introduced in November, 1954, as an effective antirheumatic medication.[1] In animals, it was found to produce involution of the thymus, eosinopenia, and glycogen deposition in the liver, as do cortisone and hydrocortisone. The similarity to cortisone in its molecular structure[2] and biological effects led us to compare the two compounds and attempt to assess the possibility of prednisone supplanting cortisone. The work was done in human subjects with rheumatoid arthritis, systemic lupus erythematosus, pemphigus, periarteritis nodosa, and diabetes mellitus associated with the nephrotic syndrome. One additional study was carried out in animals by the Selye granuloma pouch technique.[3]

SODIUM, POTASSIUM, WATER, AND GLUCOSE METABOLISM

Two patients with well-documented sustained rheumatoid arthritis of more than five years' duration were admitted to the metabolism ward of the Presbyterian Hospital, New York. Both patients were placed on a constant diet and given prednisone, 30 mg. in 24 hours in four divided doses. Daily clinical observations were made, and 24-hour urine specimens were collected throughout the study period for sodium and potassium analysis. The results of this study on two patients (cases 1 and 2) are recorded in figure 1*A* and *B*. The dosage of prednisone administered produced definitive antirheumatic effects as measured by symptomatic and objective improvement. It can be seen that this was accomplished without evidence of sodium or water retention. A transient 24-hour potassium diuresis of unknown significance was noted. However, in a dose of 100 mg. per 24-hour period, one patient with pemphigus, not on a balance but receiving approximately 4 gm. of sodium chloride per 24 hours, gained 10 lb. (4.5 kg.) in one week. This was associated with the development of marked dependent edema, and, when sodium was restricted to approximately 1 gm. per day, a prompt diuresis of 10 lb. (4.5 kg.) occurred in four days.

After three weeks of therapy with 30 mg. per 24 hours of prednisone, the sodium intake was restricted to less than 10 mEq. per 24 hours. Despite this severe sodium restriction, the patients of cases 1 and 2 (fig. 1*A* and *B*) were promptly able to conserve sodium. Another patient (case 3), with periarteritis nodosa, was placed on a constant diet, and 24-hour urine specimens for sodium and potassium were collected (fig. 2). He had been receiving 35 mg. of the hormone per 24 hours for three months. At this time he failed to respond to 25 units of corticotropin given intravenously as determined by plasma concentrations of 17-hydroxycorticosteroids.[4] He received 79.6 mEq. of sodium and 110.8 mEq. of potassium in 24 hours in his diet for six days, and urinary 24-hour sodium and potassium levels were determined. While diet and potassium intake stayed constant, sodium was restricted to 10.6 mEq. per 24 hours, and it can be seen that he promptly conserved sodium.

Before administration of prednisone, two patients (cases 1 and 2) had normal blood sugar levels two hours after eating a meal containing over 50 gm. of carbohydrates. Repeat observation on the two-hour post-

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From the Department of Medicine, Columbia University College of Physicians and Surgeons, and the Edward Daniels Faulkner Arthritis Clinic of the Presbyterian Hospital.

Fellow of the Arthritis and Rheumatism Foundation (Dr. Snyder).

This study was aided in part by a grant from the Masonic Foundation for Medical Research and Human Welfare and in part by the United States Public Health Service.

The prednisone used in this study was supplied as Meticorten by the Schering Corporation, Bloomfield, N. J. Merck & Co., Inc., Rahway, N. J., supplied the Δ^1-dehydrocortisone.

Drs. Joseph W. Jailer, Nicholas Christy, and E. Wallace of the departments of medicine and obstetrics, Columbia University College of Physicians and Surgeons, determined the plasma concentrations of 17-hydroxycorticosteroids.

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prandial blood sugar level was made after one week of treatment with prednisone, 30 mg. daily. Serum glucose values remained within normal limits, showing no hyperglycemic effect in the nondiabetic patient. On the other hand, a 15-year-old Negro male (case 4) with adequately controlled diabetes mellitus and the nephrotic syndrome was given prednisone in doses ranging from 30 to 50 mg. per day in four divided doses. It can be clearly seen (fig. 3) that a marked interference with carbohydrate metabolism developed. This was manifested by marked hyperglycemia and heavy glycosuria necessitating that his daily insulin requirement for only partial control be doubled. It can also be seen that upon the discontinuation of prednisone, effective diabetic management was again resumed at a level of insulin dosage close to his pretreatment requirement. It is interesting to note that on the 14th day of prednisone administration, diuresis began, resulting in a weight loss of 55 lb. (25 kg.) and complete clearing of the nephrotic picture.

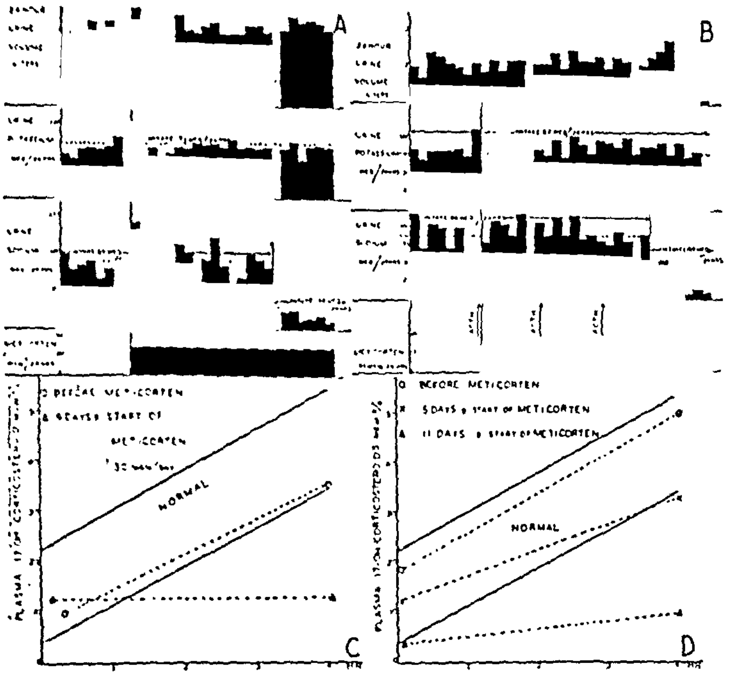

Fig. 1.—Effect of prednisone (Meticorten) on sodium, potassium, and water balance in patients with rheumatoid arthritis. *A*, case 1. *B*, case 2. Plasma 17-hydroxycorticosteroid. Response to corticotropin, 25 mg., given intravenously. p' means after. *C*, case 1. *D*, case 2.

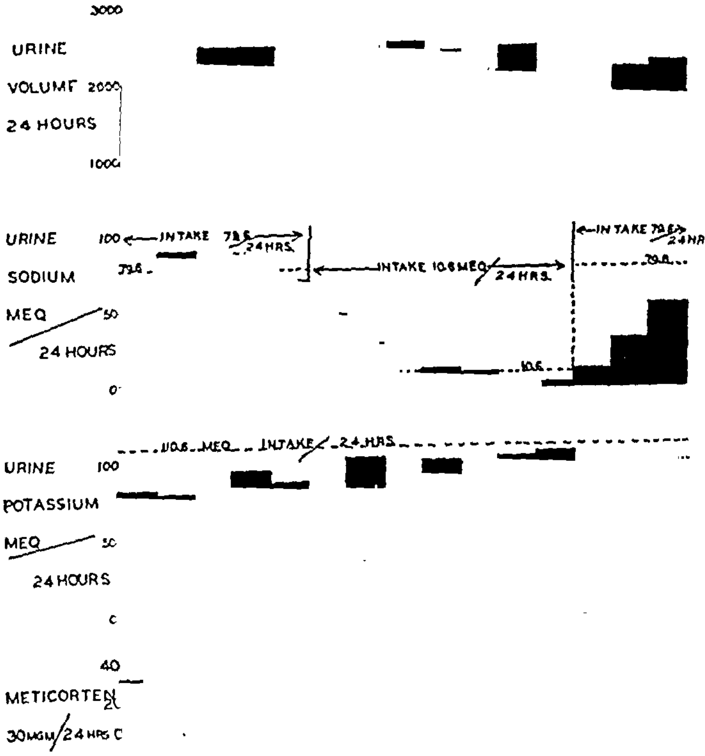

Fig. 2.—Sodium deprivation in patient with periarteritis nodosa receiving prednisone for three months (case 3).

ADRENAL CORTICAL FUNCTION

Two patients (cases 1 and 2) exhibited normal responses in their plasma levels of 17-hydroxycorticosteroids[4] to the administration of 25 units of corticotropin before prednisone therapy as shown in figure 1*C* and *D*. After 9 and 11 days, respectively, of therapy, these patients had a definitely subnormal response. One other patient (case 5), with severe rheumatoid arthritis of seven years' duration, exhibited a normal response to intravenously administered corticotropin after three years of daily oral treatment of 50 mg. of cortisone, but a subnormal response after 13 days of 30 mg. of prednisone daily (fig. 4).

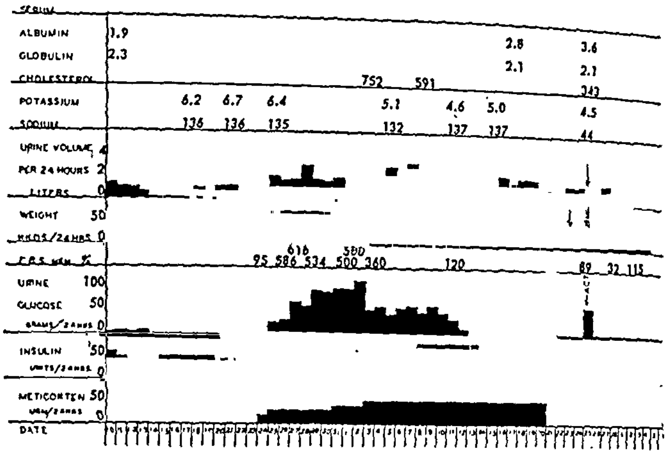

Fig. 3.—Effect of prednisone on glucose metabolism and nephrotic syndrome in patient with diabetes and the nephrotic syndrome (case 4).

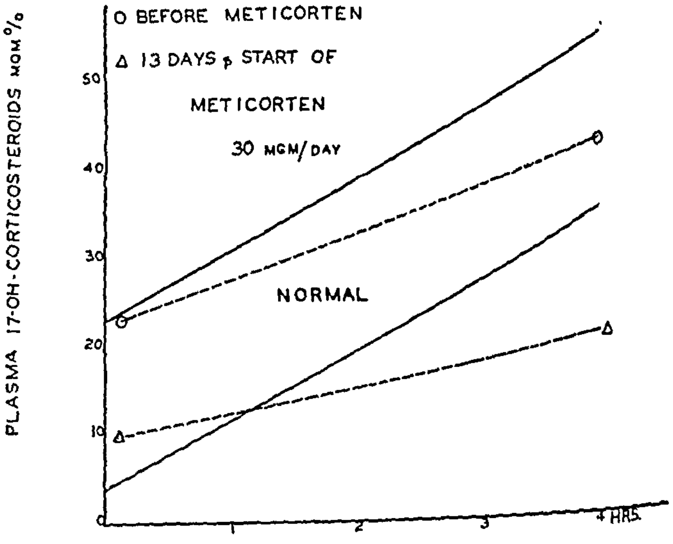

Fig. 4.—Plasma 17-hydroxycorticosteroid. Response to corticotropin, 25 mg., given intravenously (case 5). p' means after.

ANTI-INFLAMMATORY EFFECT ON RATS

Granuloma pouches were made in 26 rats by the Selye technique. Nine animals served as controls and received 1 cc. of saline solution administered subcutaneously twice a day; eight animals received cortisone, 1 mg. subcutaneously twice a day; and nine animals received prednisone, 1 mg. subcutaneously twice a day.

The results are charted in the table. There was a marked reduction in the weight of the granuloma membrane in both the cortisone-treated and prednisone-treated animals after one week of treatment.

ANTIRHEUMATIC PROPERTIES

We have been interested in comparing the clinical aspects of the antirheumatic properties of prednisone to those of cortisone. Patients with rheumatoid arthritis maintained on long-term suboptimal therapy with cortisone were given prednisone. The suboptimal end-point in therapy has been taken as that amount of steroid required to keep these patients ambulatory and effective, if possible. We chose a starting dose of prednisone as 30 mg. in 24 hours in divided doses. Patients with rheumatoid arthritis suboptimally controlled on 75 to 100 mg. of cortisone were maintained ambulatory with prednisone in doses between 20 and 25 mg. Erythrocyte sedimentation rates, elevated on 100 mg. of cortisone, became normal with the above doses of prednisone. We have noted in patients receiving prednisone the same complications of adrenal cortical hyperfunction (Cushing's disease) as is seen with cortisone. Cushing's facies have developed within two weeks on 20 mg. of prednisone per day. One patient with systemic lupus erythematosus developed a frank psychosis with hallucinations during daily doses of 50 mg. similar to a previous psychosis that appeared while she was receiving cortisone. Severe tension states that had developed in two patients with rheumatoid arthritis while taking cortisone have persisted on doses of prednisone that were one fourth of the cortisone dose. A duodenal ulcer, demonstrated by gastrointestinal x-ray series, developed in a patient with rheumatoid arthritis after two weeks of prednisone treatment. A patient with periarteritis nodosa developed a large gluteal abscess, unaccompanied by systemic symptoms and with a marked inhibition of granulation tissue during the administration of prednisone. It has also been our experience that the management of patients with rheumatoid arthritis, systemic lupus erythematosus, and periarteritis has been very similar to that of those patients treated with cortisone. If the amount of prednisone is reduced below that required to suppress inflammation, the symptoms of their disease have returned, usually within 24 hours. Symptomatic and objective evidence of active disease can again be suppressed only with increasing the amount of prednisone administered.

COMMENT

There are no data available to indicate that the antirheumatic and antiphlogistic actions of prednisone differ qualitatively from those of cortisone. This is shown by the fact that we have seen the development of Cushing's facies, difficulty in the control of infection, psychosis, retention of fluid with large doses of prednisone, interference with glucose metabolism, activation of duodenal ulcer, and the prompt return of symptoms upon cessation of treatment with this steroid in patients with active rheumatoid arthritis. This is also supported by the observed decrease in size of granuloma membrane, thymic involution, eosinopenia, and increased glycogen deposition in the liver in animals receiving prednisone. The transient diuresis of sodium and potassium seen in two patients (cases 1 and 2) with active rheumatoid arthritis cannot be attributed to any diuretic property per se. These two patients had an active systemic inflammatory disease with large joint effusions and surrounding soft tissue edema. It is possible that a release of electrolyte from these inflamed areas may have occurred secondary to the antiphlogistic action of prednisone.

We were concerned regarding the lack of response of the adrenal cortex to the administration of corticotropin in patients receiving prednisone. The administration of cortisone has been observed to produce the same effect. However, the amount of cortisone needed to control the symptoms of rheumatoid arthritis has more sodium-retaining and water-retaining properties in the patient with a normal-functioning adrenal gland and would tend to protect the patients from an "Addisonian-like crisis." It is reassuring to see that sodium conservation can occur in the prednisone-treated patient on severe sodium restriction despite the fact that it interferes with the production of 17-hydroxycorticoids in the plasma following corticotropin administration. There are no data available at this time on the complications of prolonged administration of this hormone. From this discussion, it would appear that the postulated mode of action in suppressing inflammation is qualitatively similar to that suggested for cortisone. The interference with tissue turnover should be followed in time by complications such as osteoporosis and compression fractures.

Comparative Effects of Prednisone and Cortisone on the Granuloma Pouch Weight in Rats

Therapy, for 1 Wk.	Granuloma Pouch Mean Wet Wt., Gm.	Adrenal Wt., Gm.	Body Wt., Gm.	
			Initial	Final
Saline solution in 9 animals..........	3.5	50.4	141	182
Cortisone in 8 animals, 1 mg. subcutaneously, twice daily............	1.8	24.4	138	130
Prednisone in 9 animals, 1 mg. subcutaneously, twice daily............	1.3	40.5	136	123

Sodium retention with edema has been a frequent occurrence in our experience in the long-term cortisone therapy of rheumatoid arthritis. It has been possible to control this with relatively simple cardiotonic and diuretic measures in most instances. Potassium loss in our cortisone-treated patients has been of negligible importance and potassium supplementation has been required only rarely. At this time, prednisone has been demonstrated to be superior to cortisone in only one aspect, namely, that it has a lesser potential for sodium and water retention, and potassium diuresis at doses effective as an antirheumatic agent. Long-term therapy is, however, fraught with many hazards, and the abolition of one or two would be of great help to the patient and physician. We believe that the decreased salt-retaining and potassium-losing properties of prednisone at dosages required for suboptimal control of most patients with rheumatoid arthritis warrant its use in preference to cortisone and that prednisone will supplant cortisone as an anti-inflammatory agent.

SUMMARY

Reported clinical studies have shown that prednisone has the following biological properties: (1) effective anti-inflammatory and antirheumatic properties demonstrated in humans and rats; (2) interference with glu-

cose utilization; (3) ability to suppress elaboration of 17-hydroxycorticoids by the adrenal cortex following intravenous administration of corticotropin; and (4) anti-inflammatory property is quantitatively, milligram for milligram, greater than cortisone, thereby permitting less sodium and water retention and potassium diuresis at dosages needed for symptom control in rheumatoid arthritis. We believe that qualitatively the mechanism of its anti-inflammatory and antirheumatic action is similar to cortisone and that prednisone is preferable to cortisone as an anti-inflammatory agent.

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BREAKING THE SOUND BARRIER AND ITS EFFECT ON THE PUBLIC

Col. John M. Talbot (MC), U. S. A. F.

Theory tells us that whenever an object speeds through the atmosphere at the velocity of sound, or faster, it generates a compression wave or shock wave that is similar to a high explosive blast wave. The ear perceives a definite boom, and the skin pressure receptors may sense a momentary concussion. Sonic boom is currently the popular term for the phenomenon. Through all of history, hearing beings have occasionally been startled by the explosions of meteorites crashing down through the atmosphere, our earliest example of the sonic boom. More familiar examples are the sharp crack of a passing rifle bullet and even the explosive pop of the lion trainer's whip as it accelerates for an instant beyond the speed of sound.

The foundation of our present supersonic jet era embraces a fascinating story of concentrated aeronautic research and development effort and heroic test flights in an international race to achieve the great tactical advantages of ever swifter flight and higher altitudes. Only some highlights can be mentioned here. The United States officially entered the race in 1944 when the Air Force, Navy, and National Advisory Committee for Aeronautics jointly launched the high speed flight research program. The Bell Aircraft Corporation won the first design competition for a transonic research aircraft and was awarded a contract in May, 1945, to build the first of its famous research series of rocket powered airplanes, the XS-1. The Douglas D-558-1 Skystreak and D-558-2 Skyrocket spearheaded the second important series of research aircraft. The first pilot to break the sonic barrier was Major (then Capt.) Charles E. Yeager, who, on Oct. 14, 1947, flew the Bell XS-1 faster than 1,600 miles per hour and higher than 70,000 ft., establishing unofficial world's records for both speed and altitude. Steady progress followed in both the Bell and Douglas experimental series. The first production-type military airplane to exceed Mach 1.0 (sonic speed) was the North American F86-A, a swept wing fighter, now renowned for its magnificent record against the Reds in Korea.

As pointed out by Corey Ford,[1] during the period January, 1951, through October, 1953, a sporadic series of startling and unexplained explosions occurred in widely scattered communities in the United States and Canada. Meanwhile, experience in test diving new jet fighters to and beyond the velocity of sound ultimately demonstrated that here, previously unsuspected, was the cause of the disturbing blasts. Prompt remedial steps were taken by the Air Force and the aircraft industry to control flight operations so that populated areas would experience a minimum of these annoyances.

This paper has two purposes: to review and interpret some of the facts and theories about the sonic boom and its effect on the public, in the hope that a wider understanding of this phenomenon by the medical profession will aid in reassuring the American public and in promoting a readier acceptance of our vital supersonic defense weapons; and, secondarily, to indicate briefly what the Air Force is doing about control of aircraft noise in general.

GENERATION OF THE SONIC BOOM

To begin with, let us consider the current theory of the sonic boom as caused by super fast aircraft. In order not to complicate the basic concept, assume ideal atmospheric conditions; i. e., still air of uniform temperature and density. Diagram *A* of figure 1 shows the radial propagation in all directions of pressure disturbances from a fixed sound source in the air, as from the engine of a hovering helicopter. These waves move at the velocity of sound, which in still air at sea level and 20 C is about 1,100 ft. per second, or 760 miles per hour. For airplanes moving near the speed of sound or faster, it has become customary to express the velocity in Mach numbers, defined as the ratio of the velocity of the aircraft to the velocity of sound under the attendant atmospheric conditions. Hence, in a standardized situation of average sea level air, an airplane moving at 760 miles per hour has a velocity of Mach 1.0. As a rough index, the speed of sound varies from 760 miles per hour at sea level to 675 miles per hour at 30,000 ft. Diagram *B* illustrates the effect of motion through the air of the sound source, in this case an aircraft moving at less than the speed of sound. Note that the sound waves are still propagated in a radial distribution in all directions but that those racing along the flight path tend to be crowded together into a higher frequency as compared with those emitted in the opposite direction. This is a graphic illustration of the Doppler effect, familiar to many as the sudden drop in pitch of a train whistle as the train flashes

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Read before the Section on Military Medicine at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 8, 1955.

The discussion of this paper was opened by Dr. Aram Glorig and Major Sidney I. Brody.

The technical data on which this paper is based are from the Air Research and Development Command Research and Development Program in Noise and Vibration Control.

[1] Ford, C.: The Truth About the Sonic Boom, Sat. Eve. Post 227: 26 (Dec. 4) 1954.

close by. Next, consider the effect of the aircraft moving at supersonic speed, as shown in diagram *C*. In this case, the air frame itself, nose, wings, and tail, is the source that generates the most striking pressure disturbances in the air; at supersonic velocity, it actually moves ahead of the successive pressure rings it generates. As indicated in the drawing, successive disturbance rings become tangent to a line sloping away from the source at an angle, reinforcing each other and joining to form larger disturbances known as shock waves. The angle between the shock wave and the flight path is called the Mach angle, and it varies inversely with the speed of the airplane.

PROPAGATION OF SONIC BOOM

To date, the sonic booms that have reached ground level have been produced only by diving maneuvers and by relatively low altitude fly-bys; nevertheless, because it is theoretically possible for the shock waves from a supersonic aircraft flying straight and level to reach the surface, operational policy requires supersonic flights over populated areas to be at 30,000 ft. or above. A comparison between the effect of diving through the speed of sound and of flying level above Mach 1.0 is shown in figure 2. The compound nature of the shock front is suggested by the dense shading of the leading part, to represent increased pressure, and the light shading of the trailing part, to represent decreased pressures, all relative to the ambient atmospheric pressure. In the case of the dive, the airplane, flying at less than Mach 1.0 enters a downward flight path and accelerates past Mach 1.0, generating a continuously growing shock front that travels toward the ground. Although measured data are incomplete as yet, the sonic booms during diving maneuvers and 10,000 ft. altitude fly-bys have been observed to spread over areas varying in diameter from 15 to 35 miles. In practice, it is possible for the pilot in a dive to aim the shock wave toward a ground target with fair accuracy. The right-hand diagram illustrates shock wave propagation to the ground in the case of level supersonic flight. It is apparent that the shock wave moves along the surface in the direction of flight and may therefore sweep a path approximately equal in length to the level supersonic flight path of the source airplane. This is in contrast to the focusing effect resulting from the dive. This diagram has been simplified to the point that only the primary shock wave has been shown, as it is the principal one of concern in this paper. Actually, separate shock waves may arise from several presenting surfaces of the airplane such as nose, windscreen, wings, and tail.

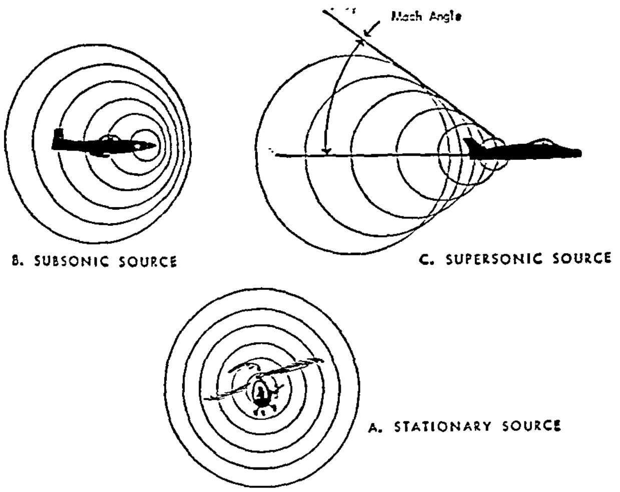

Fig. 1.—In situations *A* and *B* sound waves radiate in all directions from source. Airplane in diagram *C* flies faster than sound, trailing succession of sound waves that form reinforced pressure front called shock wave.

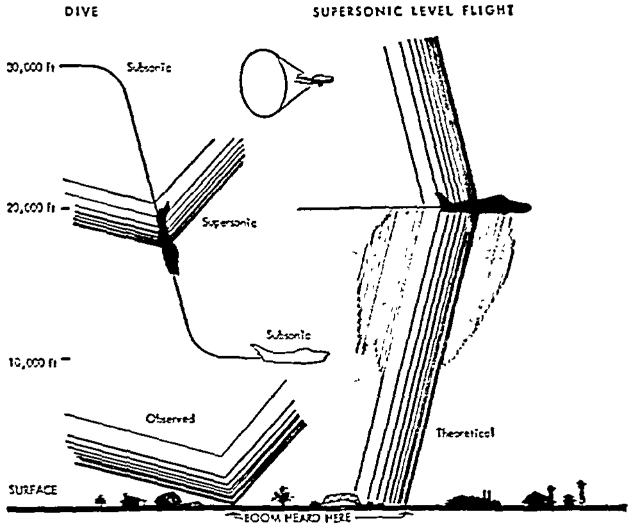

Fig. 2.—Airplane on left dives at supersonic speed, generating shock wave that is transmitted to surface along line of flight. Shock waves from supersonic airplane in level flight can theoretically reach ground, as shown in diagram on right.

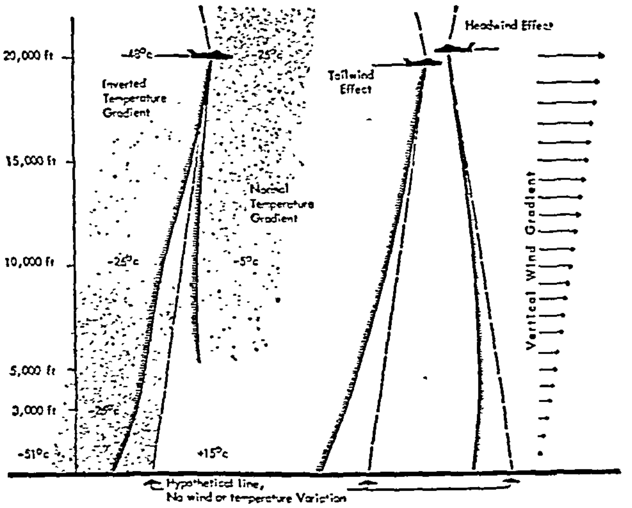

Fig. 3.—Effects of temperature and winds on shock waves. Altitude in thousands of feet is shown as ordinate. Evaluation of possible importance of these variables on shock wave transmission is in progress.

FACTORS THAT INFLUENCE TRANSMISSION OF SHOCK WAVES

One may ask, "What are the important factors besides speed and direction that influence the transmission of the sonic boom?" There are many, but the most significant appear to be air density, atmospheric temperature, winds, and distance from the source to the observer. Figure 3 illustrates the effects of vertical temperature gradients and wind gradients up to 20,000 ft. In each diagram, the dashed lines extending to the surface indicate the theoretical transmission of shock waves in still air of uniform density and temperature. It may be seen that the normal temperature gradient causes the shock wave to move faster as it enters higher temperature levels nearer the ground; the shock wave terminates at the altitude at which the velocity of sound equals that of the source aircraft (shown by the end of the solid line). Conversely, in the inverted temperature gradient situation, the shock wave is swept back into an exaggerated trailing position relative to its source. The influence of the normal vertical wind gradient may be seen in the right-hand diagram. A head wind gradient, with high winds aloft and lesser winds near the surface, allows the shock wave to bend forward of the undisturbed theoretical line; conversely, in the case of the vertical tail wind gradient, the waves are bent rearward.

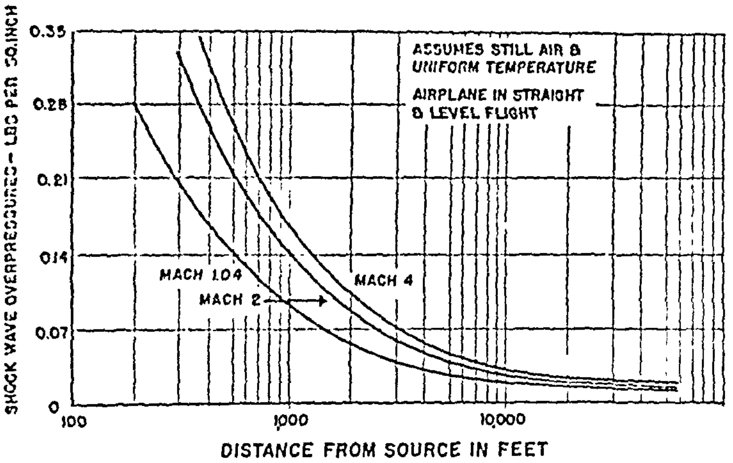

Fig. 4.—Theoretical shock wave overpressures as function of speed and distance. Note that beyond 5,000 ft. from source, influence of speed of source on shock wave pressures is negligible. These figures contrast with blast wave overpressures; e. g., 5 lb. per square inch from 20 kiloton atomic explosion at 5,000 ft.

NATURE OF THE SHOCK WAVE

What is the nature of the shock wave? It is not unlike the blast wave (minus windage or gust effects) of a high explosive detonation or even of a nuclear detonation, the essential differences being duration and degree of pressure differential across the shock wave. All have these factors in common: they originate from a center of high compression, travel supersonically at first, then at sonic speed; and they have a characteristic triphasic history of initial overpressure build-up followed by decompression below atmospheric and recompression to ambient level. In the case of the sonic boom, the initial phase or compression wave is heard as the first boom; the final phase, or recompression to normal, as the second boom. A typical time sequence for this chain of events occupies about 0.1 second, which is much longer than the shock wave of the conventional high explosive bomb but shorter than that of the nuclear explosion. Figure 4 gives an idea of the pressure rises measurable across sonic boom shock waves and of the influence of distance and velocity of the source. It is seen that, especially at distances beyond 5,000 ft., the effect of speed is very small. The attenuating effect of distance is clearly shown. In contrast the peak overpressure for a 20 kiloton nuclear explosion measured at 5,000 ft. is approximately 5 lb. (2.3 kg.) per square inch, or more than 140 times greater than the shock force that would theoretically be felt from a jet airplane moving at Mach 2 at an equal distance. Extensive research has shown that man is remarkably resistant to blast effects as compared with such familiar structures as average buildings and aircraft. One threshold figure frequently seen in the literature for primary blast damage to man is 50 lb. (22.7 kg.) per square inch peak overpressure; ordinary aircraft on the ground are disabled by 5 lb. per square inch peak overpressure. Although the physical characteristics of the sonic boom are not completely known, the evidence to date suggests that it should be possible to extrapolate directly, albeit roughly, from the more familiar biological effects of high explosive and nuclear blasts to the likely effects of supersonic flight shock waves. On this basis we should expect no serious direct hazard from the latter.

DAMAGE POSSIBLE FROM SHOCK WAVES

In contrast to this, although the amount of damage to buildings and other structures that can be caused by the sonic boom has not been completely determined, the record shows that the numerous booms that were unwittingly directed against the public during early supersonic test dives resulted in a few instances of shattered windows, cracked plaster, and objects knocked off shelves. The most striking examples of damage accompanied the low altitude supersonic runs of the North American F-100. For instance, at Palmdale, Calif., the airport administration building suffered many broken windows, broken wooden door frames, and cracked 4 by 4 in. wooden beams; and during speed trials over the Salton Sea, damage to windows, door frames, and doors in 17 houses amounted to $3,600.

In this brief introduction to the theory of the sonic boom, it has been shown that whenever an airplane accelerates past the speed of sound it generates a shock wave that may be transmitted to the ground, where it is heard as an explosive boom; that these waves can cause physical damage to buildings; and that distance from the source is the most important attenuating factor. It should be added that there is no known way of avoiding the production of the offending shock waves during supersonic flight, although certain air frame designs that reduce sonic drag hold promise for decreasing the intensity of shock waves and perhaps of partially limiting the extent of their propagation.

It is now appropriate to enquire into the effects on the public that result from breaking the sound barrier. Here, it is desirable for the moment to distinguish between the general nuisance problem of all types of airplane noise and the specific companion problem of the sonic boom. By comparison, the former is most formidable and is the subject of an extensive and costly program of research and control measures in the military services.

PSYCHOLOGICAL AND ECONOMIC EFFECTS OF SHOCK WAVES

The effects of the sonic boom on the public fall into two chief categories: psychological and economic. As was pointed out above, during a 20 month period commencing in January, 1951, the American public was exposed to a number of startling, completely unexpected, and unexplained explosion-like noises at widely scattered places across the nation. On different occasions, public reactions approached panic, with frantic calls to police and fire departments and rumors of sabotage, flying saucers, and airplane crashes. All investigations failed to yield the culprit until the true cause of the disturbances was accidentally discovered at Wright-Patterson Air Force Base, Ohio, during the test diving of a jet fighter. With the discovery of the cause came prompt action to control flight operations, and the mysterious explosions over urban communities ceased. It is clear that the startle reaction was the most noteworthy psychological effect and it follows, the most likely reaction that could lead to panic. To the effective remedy of controlling supersonic flight operations has been added the prophylaxis of public enlightenment about the cause and relative harmlessness of sonic booms. Were it necessary, for hypothetical reasons, to expose a community repeatedly and chronically to the sonic boom, the reaction would probably culminate in a rapidly organized legal assault against the offending agency, for not only would the nuisance effect be severe but also the real or imagined adverse economic influences would blossom. Property values might decline; domestic fowls and animals raised for profit might suffer fear-induced damage, all resulting in true economic loss.

Unlike the sonic boom, the other noises produced by modern airplanes and power plants are at least blessed with a less startling and dramatic mode of onset. This blessing, if such it can be called, is of small comfort, however, when one considers the magnitude of the noise problem faced alike by military and civil aviation. Public complaints about the annoyance and economic damage caused by jet noise reached such a level in 1952 that the Air Force had to resort to extraordinary measures in an attempt to meet the problem. As an example, one complaint, which predicted dire effects on the operation of a long-established boys' school because of an Air Force plan to operate B-47's from the local air base, required eight months of investigation plus the personal attention of the Air Force Secretary and Chief of Staff before the plaintiff could be assured that no real threat to the economy of the school existed. On the other hand, at certain active Air Force bases in this country, the exposure of the surrounding community to the noise of flight operations and engine test noise is unavoidable. As was recently pointed out by Parrack,[2] people living within one mile of an active runway and take-off flight path for modern jet bomber operations are in the zone of interference with communication; between 5,000 ft. and 15,000 ft. away, they are in the zone of general annoyance. Under these and similar conditions, community response varies from complete acceptance at the low noise levels to vigorous legal action when individuals or groups are exposed to sufficient noise to be convinced that they or their property or their businesses will be damaged.

Figure 5 will serve to orient the reader in the matter of relative noise intensities from different types of sources. These are typical noise levels at 300 ft. from the source. Note that as progress is made from conventional propeller drives through supersonic props, turbojets, turbojets with after-burners, and on to rocket engines, our potential for delivering big noises steadily rises. By way of comparison, average conversational speech at 3 ft. measures about 80 db.; 65 db. of noise interferes with loud speech, 120 db. causes physical discomfort, and 140 db. produces pain in the ears.

PROGRAM FOR CONTROL OF NOISE PROBLEM

Recognizing the seriousness of the noise problem, the Air Force has directed a comprehensive and coordinated research and development program for the control of noise and vibration caused by all types of Air Force activities. This high priority program has four main approaches: (1) reduction of noise at its source; (2) methods of attenuating noise during ground operations; (3) biological and psychological effects of noise; and (4) community reactions to noise.

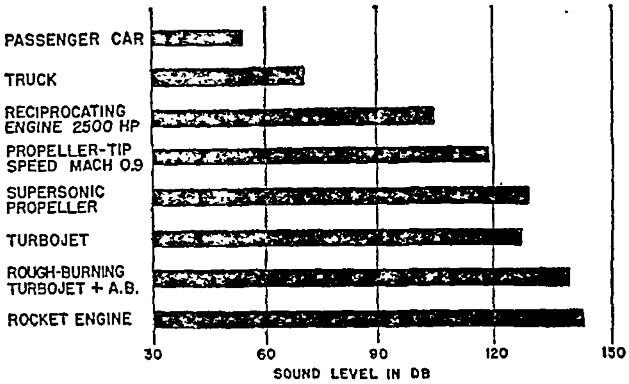

Fig. 5.—Typical over-all noise levels at 300 ft. For comparison, ordinary speech at 3 ft. measures about 80 db.; 80 db. of noise interferes with loud speech; 140 db. causes pain in ears.

The first approach does not appear very promising. Our objective is to keep noise production to a minimum compatible with engine thrust requirements; as thrust increases so does noise. However, a limited improvement may be won by smoothing out the transition to afterburning and by reducing rough burning. Suppression of noise during ground operations offers more leeway, although some of the methods are expensive and cumbersome. As an example, a typical installation to reduce the noise of a jet engine test stand might cost $250,000. Even a simple blast wall for engine run-up costs between $30,000 and $60,000. A partial solution to the community noise problem lies in the application of a series of controls of flight operations; these include routing local air traffic over less densely populated areas, restricting low flying, minimizing exposure to high intensity noise by using high power setting, rapid climbs or low power setting, slow climbs, and adjusting operational schedules when feasible to reduce noise during the more "vulnerable" parts of the 24 hours, such as the hours of sleep.

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[2] Parrack, H. O.: Protection from Aircraft Noise, A. M. A. Arch. Indust. Hyg. 10:273 (Oct.) 1954.

The program on the biological and psychological effects of noise is directed toward solving the problems of high intensity and of frequent exposures as obtain in the case of jet maintenance personnel and other problems intimately associated with the repair, test, and operation of Air Force equipment. Preventive medical techniques and equipment are the main objectives of this program.

Community relations and public education are believed by many to offer the best approach to a solution of the noise problem. Experience has already shown that a community that understands the problem and knows that all reasonable efforts are being made to control the noise nuisance will adopt a cooperative spirit and an adaptive attitude. Without public understanding and good relations between the air base and the local community, individual and group reactions to aviation noises may interfere seriously with essential Air Force operations. A good example comes from Madison, Wis., where the effectiveness of the local Air Defense Command interceptor unit was threatened by irate citizens complaining that the jet noise intruded on their privacy. The unit commander invited a representative group of the civil leaders to the base for a thorough briefing about the mission of the Air Defense interceptors, a realistic explanation of how Madison is among the American cities lying well within the range of enemy long-range bombers, and a tour of the base to meet the fine young fliers and observe them in action in their vital defensive mission. Public acceptance of the jet noise as an undeniable part of the over-all air defense operation soon became established, and the base has since enjoyed excellent relations with the local community.

To get at the facts of human responses to noise, the Air Force supports research in the following areas: personnel damage, property damage, speech interference, and community annoyance. Of these, the measurement of community annoyance has recently received great emphasis, because it was the least understood and yet possibly one of the most important factors. Even without personnel damage, property damage, or speech interference, people may develop feelings of disturbance, fear, resentment, or even violent hatred in extreme cases of noise intrusion. The objectives of these studies are to understand community responses to noise; to develop methods for predicting community response; and to develop improved techniques for dealing with community annoyance problems.

COMMENT

Thus far, the studies have indicated the importance of several conditioning factors that appear to influence public reaction. Favorable factors include familiarity with the sound and its meaning; a favorable connotation with the sound, such as an appreciation that it stands for national security; an awareness that the noise is unavoidable and/or that all possible steps are being taken to keep the noise to a minimum; and sufficient release of operational information to keep the public appraised of forthcoming operations that may be unusually noisy or that may occur at unusual times during the day or night. Unfavorable factors such as a connotation of the aircraft noise with danger, as might arise from knowledge of recent airplane accidents in the vicinity, tend to increase public annoyance.

Although community reactions seem to be directly proportional to the sound intensity, they do not obey a simple mathematical relationship of this sort; hence, various degrees of reaction may be expected to result from a given level of noise. Besides the sound intensity, many other factors are believed to influence community response—frequency range of the sound, suddenness of onset, time of day or night, frequency of exposure, duration of exposure, and degree of difference from the usual noise background—all are involved, as are economic factors such as businesses and vocations that, by their nature, suffer from aircraft noise.

SUMMARY

Airplanes flying faster than the speed of sound generate a shock wave that may be transmitted to the ground, where it is heard as an explosive boom. Shock waves of this type can cause minor physical damage to windows, doors, and other parts of buildings and adverse psychological effects in exposed populations, such as the startle reaction, fear, and panic tendencies. Restriction of supersonic flying to unpopulated areas and to high altitudes prevents public exposure.

In connection with more general aspects of aviation noise, both military and civil aviation are confronted with an enormously difficult problem of control. Annoyance, anger, and fear as well as real or imagined economic loss are the main public reactions. To meet the problem, the Air Force supports an extensive research and development program aimed at determining the effects of aviation noise on individuals and groups and at improved methods of noise suppression and control. With respect to public reactions to noise, the most promising approach appears to lie in the direction of education and improvement of relationships between air bases and surrounding communities.

Air Research and Development Command, Baltimore.

Renal Function During Anesthesia.—General anesthesia appears to produce a stereotyped response in the kidney dependent in part upon the depth of anesthesia and in no way dependent upon the specific anesthetic agent used. The greater the depth of anesthesia the more profound the changes. These changes consist of a striking intrarenal vasoconstriction associated with a fall in glomerular filtration and a reduction in the excretion of electrolytes and water. There is a relative increase in tubular reabsorption of both electrolytes and water. These changes are extensive and are similar to those seen in other alterations of physiological activity or in a variety of diseased states which may be considered stressful. In the absence of shock and hemorrhage, surgical operation has little influence on these renal functional changes. The precise mechanism of these alterations in kidney function is not known. It appears possible, however, that these alterations are due to an humoral effect, possibly from the adrenal medulla or the adrenal cortex. The striking renal dysfunction which may occur in the postoperative period is not due to the influence of the anesthetic agent but presumably to other factors involving the responses to stimuli from the operative area with subsequent shifts in body fluids.—E. M. Papper, M.D., Renal Function During General Anesthesia, *Bulletin of New York Academy of Medicine,* June, 1955.

UREMIA-LIKE SYMPTOMS NOT DUE TO UREMIA IN BATTLE CASUALTIES

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Early in the Korean war, as in World War II, approximately 90% of the wounded men who developed renal failure died. When a special center for the treatment of renal insufficiency was established in the combat zone of Korea, increased emphasis was placed upon the early recognition and treatment of renal failure in wounded men. Strict attention was focused on urinary output, and patients with a 24-hour urinary volume of less than 500 cc. were transferred promptly to the renal center, where specialized treatment, including artificial kidney dialysis, was available. The mortality rate for patients with renal failure fell promptly to approximately 50%, but there it remained for the duration of the war. This dreadful figure was not reduced further, even though the chemical effects of uremia responded well to methods of treatment then available. The cause of death was not always known, but it appeared not to be uremia per se.

Several pathological conditions usually were recognized in a single patient. The original trauma that led to the development of renal failure often continued to produce adverse effects at the time when uremia was at its worst stage. Additional conditions present may have been secondary effects either of the original trauma or of uremia. In this compound disorder it was quite difficult to determine the exact etiology for a specific sign or symptom or for the mechanism of death. If therapy is to be more successful it must be more specific, and this can only occur if an individual cause can be paired with an individual effect.

APPROACH TO PROBLEM

The purposes of this article are to point out the major cause of death, to describe the features of this disorder that differentiate it from uremia, and to suggest ways to lower the 50% mortality rate. The material is derived from a detailed review of the records of the patients who died at the renal center during the last six months of the war. This analysis, documented elsewhere,[1] revealed that 30% of deaths were the result of the extent, severity, or location of the initial wounds or were a direct result, such as embolism, of the nature of the wounds. In this group the early destruction of vital organs made the fatal outcome inevitable, and often initial survival was possible only because of the heroic efforts in resuscitation practiced in the forward medical installations. More than 60% of the deaths were the result of infection that was introduced with the initial trauma, and it is this group that commands our attention.

At autopsy the typical lesions of acute tubular nephrosis usually were found, and this was listed as the cause of death. The infections found at autopsy were considered to be secondary to the renal failure, although they were located in the original wounds. It has been stated that renal failure predisposes to the progression of infection, but the principal basis for this opinion appears to be the greater incidence of infection in patients with oliguria. A more likely explanation for the progression of infection during oliguria can be found in the records of the early course of the patients. The usual wounded man, who did not have prolonged oliguria, was carefully observed for signs of infection. When warning signs appeared, the best principles of surgery were employed promptly. If the general condition of the patient deteriorated, the search for hidden infection was intensified and vigorous treatment was instituted. If the patient had oliguria, however, an aura of mystery descended upon him to enshroud from view the signs and symptoms that otherwise would have provoked immediate action. Fever, unusual leukocytosis, and even classical bacterial "toxicity" did not provoke a search for infection but were obscured by conjecture as to possible effects of imbalance of electrolytes and nitrogen. The patient was not treated in accordance with the best principles of surgery, and infection progressed to an irreversible stage. The deterioration of the patient was presumed to be caused by some mysterious chemical effect of uremia, and he was transferred to the renal center, where he died of infection. This criticism is not to be interpreted as blame, for there were good reasons for the confusion. One of the factors responsible was the great emphasis placed on oliguria, fostered at the renal center, and drummed into the awareness of every doctor in the combat zone. The other principal factor was lack of knowledge of the natural course of acute uremia with and without complicating infections.

The features of post-traumatic uremia that produced symptoms during the first week could be completely, if temporarily, controlled by artificial kidney dialysis. After dialysis the patient was alert and felt well if no additional disorder was present. The chief disorder associated with uremia was infection, and the persistence of uremia-like symptoms after dialysis was highly suggestive of bacterial toxicity. At that time, when the chemical effects of uremia had been corrected, the additional diagnosis usually was apparent. However, dialysis was not usually performed until several days after the best and perhaps the only opportunity for effective treatment of infection had passed. If proper treatment of each condition was to be accomplished, the effects of uremia and sepsis had to be differentiated early in the course. The manifestations of the two conditions were strikingly similar, and, in fact, 19% of the patients transferred to the renal center with the diagnosis of uremia had sepsis but no demonstrable renal lesion. Since 80% of such patients died, there was opportunity to confirm histologically the clinical opinion that the kidneys were anatomically normal.

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Read before the Section on Military Medicine at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 7, 1955.

The *discussion was opened by Dr. A. C.* Corcoran, Cleveland, and Dr. Paul D. Doolan, Oakland, Calif.

[1] Meroney, W. H.: Activities Report of the Renal Insufficiency Center, Wonju, Korea, for the Period 25 February–6 August, 1953, Surgical Research Team, Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, D. C., 1953.

RENAL FAILURE AND RENAL FAILURE COMPLICATED BY SEPSIS

Clarification of certain differential diagnostic points between these conditions will be attempted by contrasting some features of a hypothetical case of pure renal failure and a case of renal failure complicated by sepsis.

Pure Renal Failure.—Consider first the patient who had acute post-traumatic renal failure but no significant infection. Typically, he suffered severe wounds with considerable hemorrhage and profound shock, from which he was resuscitated only after vigorous transfusion for several hours. There was no evidence of transfusion reaction; the wounds were débrided thoroughly as soon as the systolic blood pressure was stable at a level above 100 mm. Hg, but only 50 cc. of bloody urine was excreted during the first 24 hours. The patient was alert, afebrile and did not appear to be in toxic condition. Pain in the wounds was mild and was controlled with small, subnarcotic doses of meperidine (Demerol) hydrochloride. Because of an abdominal wound he could take nothing by mouth, and his total fluid and caloric intake consisted of a continuous intravenous infusion, running at a constant rate of ⅓ cc. per minute. Until blood chemical analysis revealed a need for a change, the infusion contained 25% glucose in water, ¼ unit regular insulin per gram of glucose, and water-soluble vitamins. On the second postwound day the patient felt and appeared essentially as before. The wounds were clean, mild hypertension was present, and an electrocardiogram was normal. Examination of the urine revealed: 24-hour volume 50 cc., grossly bloody, specific gravity 1.016, albumin 4+, numerous granular and erythrocyte casts, and sugar and acetone negative. Blood examination showed: hemoglobin level 14 gm. per 100 cc.; white blood cell count 12,000 per cubic millimeter; nonprotein nitrogen 80 mg. per 100 cc.; sodium 125 mEq. per liter; potassium 5.5 mEq. per liter; carbon dioxide level 20 mEq. per liter; calcium level 10 mg. per 100 cc.; and phosphorus (inorganic) level 4 mg. per 100 cc. The patient's condition was satisfactory.

On the third postwound day the patient was essentially the same, and the same regimen was continued. On the fourth postwound day the patient was somewhat lethargic but well oriented. He complained of thirst and slight nausea but had not vomited. Occasional periods of hiccups caused pain in the abdominal wound, and meperidine hydrochloride, 50 mg., was required four times daily. Blood pressure was 160/90 mm. Hg; the wound bandages, which were thin and loosely applied, showed a small amount of odorless, serous exudate; there were no other abnormalities. The electrocardiogram was normal. Urine examination showed: 24-hour volume 50 cc., blood tinged, specific gravity 1.010, albumin 4+, numerous granular and erythrocyte casts, and sugar and acetone negative. Blood examination showed: hemoglobin level 13 gm. per 100 cc.; white blood cell count 12,000 per cubic millimeter; nonprotein nitrogen 160 mg. per 100 cc.; sodium level 125 mEq. per liter; potassium level 6.0 mEq. per liter; carbon dioxide level 16 mEq. per liter; calcium level 8.5 mg. per 100 cc.; and phosphorus level 6.6 mg. Plans were made to dialyze the patient's blood with the artificial kidney in a day or two if diuresis did not occur. In the meantime, 100 mEq. per liter of sodium as lactate or bicarbonate were added to the infusion to modify the acidosis.

Subsequent Course: If oliguria continued and if dialysis were not performed the clinical and chemical abnormalities noted above would progress gradually. The sensorium would deteriorate as the nonprotein nitrogen concentration in the blood increased, and when the concentration reached about 250 mg. per 100 cc., the patient would become stuporous, yet tremulous and agitated. Severe hiccups and vomiting would prevent rest and invite aspiration pneumonia. Increasing thirst would provoke pleas for water in every articulate moment. Acidosis would become clinically manifest as hyperpnea. Hypocalcemia would be so severe that mild tetany would occur in spite of the acidosis. The moderate increase in serum potassium would register on the electrocardiogram as peaking and elevation of the T waves, first in the apical precordial leads, later in the limb leads, but there would be no signs or symptoms of this degree of intoxication.[2] If dialysis still were not performed, urea frost, coma, convulsions, and pericarditis would appear as the chemical imbalance reflected by the azotemia progressed further. Anemia would be significant at this stage, and moderate purpura might appear, but few patients whose blood was not dialyzed could survive to reach the stage of severe intestinal bleeding characteristic of prolonged uremia. Such a patient's blood was dialyzed about the sixth day, when symptoms became severe enough to cause suffering, to interfere with management, and to provoke complications. Earlier dialysis might have been beneficial, but the possibility of an early diuresis was great enough to justify delay of the procedure until major symptoms appeared. In a well-managed case the progression of symptoms was gradual, and there was no urgency for dialysis.

Renal Failure plus Sepsis.—Consider now a patient whose original insult appeared to be comparable but whose course was quite different. This patient was never resuscitated to the point that débridement could be completed. Continuous infusions of blood or arterenol (Nor-epinephrine) were required to maintain a systolic pressure of 100 mm. Hg, and when a needle was plugged or attention was diverted, severe hypotension recurred. On the day after being wounded this patient was feverish, thirsty, disoriented, agitated, tremulous, and nauseated and had occasional grand mal seizures. The urinary volume was only 50 cc. per 24 hours, and so blood chemistries were obtained. The nonprotein nitrogen was 60 mg. per 100 cc.; sodium level 120 mEq. per liter; potassium level 7.5 mEq. per liter; carbon dioxide level 20 mEq. per liter; calcium level 7.6 mg. per 100 cc.; phosphorus level 8 mg. per 100 cc. The white blood cell count was 25,000 per cubic millimeter with 90% polymorphonuclear neutrophils. An electrocardiogram showed peaking and elevation of all T waves, prolonged $Q\text{-}T_c$ interval, and widening and disfigurement of QRS complexes typical of potassium intoxication and hypocalcemia.[3] This patient had oliguria, azotemia, potassium intoxication, and many of the classical clinical features described in uremic patients.

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[2] Meroney, W. H., and Herndon, R. F.: The Management of Acute Renal Insufficiency, J. A. M. A. 155: 877 (July 3) 1954.

Subsequent Course: It was not an uncommon practice in Korea to pronounce such a patient to be uremic, which was correct; to ascribe his clinical state to uremia, which was incorrect; and to transfer him to the renal center, which often was fatal. Whether the uremia was a result of tubular nephrosis or due to a temporary functional disturbance was immaterial; the clinical state was not a result of uremia; and transfer at that time was contraindicated. Artificial kidney dialysis was performed on several such patients to prevent death from potassium intoxication, but restoration of chemical balance had no effect on the clinical state. The noxious substance, if any, was not eliminated by dialysis and the deterioration continued as before. It was then apparent that the problem was not one of known chemical toxicity; however, diagnosis of extensive muscle necrosis and septicemia at that stage did not lead to successful therapy. Furthermore, the severe hyperpotassemia, which was the chief indication for dialysis, recurred rapidly after its initial correction by dialysis. The devitalized tissue that fed potassium to the plasma was still present, and during the delay, infection had spread to involve adjacent tissues. Whether or not potassium was controlled, there was increasing toxicity from bacterial contamination and, probably, dead tissue. The usual terminal events were shock and pulmonary congestion, the latter unassociated with overhydration. Postmortem examination revealed necrosis in the area of the wound, although the surface of the wound did not necessarily appear necrotic. The renal lesions found at autopsy were listed as the primary cause of death, with pulmonary congestion and infection as secondary causes.

Renal disease was not the primary cause of death, nor was it necessarily a contributory cause of death. If the immediate terminal event were potassium intoxication, failure of urinary excretion would be a contributory cause. However, potassium intoxication of equal or greater degree would have occurred if failure of excretion had resulted from hypotension or other temporary alteration in renal dynamics rather than renal disease. Potassium intoxication can be controlled if the only defect is failure of excretion, as in the first patient. The cause of uncontrollable potassium intoxication is increased loss of potassium from cells to serum during oliguria, and the rate is actually greater when oliguria is a result of functional disturbances. The hypoxia associated with hypotension causes some potassium to escape from intact cells, but this process is reversible and of secondary importance. The important source of potassium is a focus of devitalized tissue such as the incompletely débrided wound in the second patient, and the early appearance of hyperpotassemia in such a patient should prompt an intensive search for the focus.

COMMENT

Some of the potassium that escapes to the serum may be reincorporated into tissues as a carbohydrate complex when glucose is infused. Serum concentration of potassium may then rise at a slower rate and lose some of its diagnostic value as a criterion for débridement. Inorganic phosphorus, which derives from the same tissues as potassium, is less affected by glucose infusions, and the concentration in the serum can be a useful index of necrosis. In an uncomplicated case of post-traumatic renal failure serum phosphorus concentration rises slowly, 1 to 2 mg. per 100 cc. per day, in a linear fashion. If tissue necrosis is present, serial analyses show an abrupt rise, as in the second case. A convenient way to judge whether the concentration of phosphorus is higher than it should be for the duration of the oliguria is to relate it to nonprotein nitrogen. Nonprotein nitrogen concentration in serum usually rises in a linear fashion regardless of whether necrosis is present. If the nonprotein nitrogen value is divided into the phosphorus value, both in milligrams per 100 cc., a ratio is obtained that correlates roughly with the degree of necrosis. A phosphorus:nonprotein nitrogen ratio above 0.05 is highly suggestive of the presence of necrosis, if there is no other apparent reason for inordinate hyperphosphatemia.[4] Nonprotein nitrogen concentration in serum is not a good index of the degree of divitalized tissue nor does it distinguish between acute renal disease and functional disorders of renal dynamics. The degree of azotemia simply reflects the duration of oliguria and has no more significance than the diminished urinary volume, which is easier to measure.

Clinically, the two cases described had many features in common, and pathologically both had acute renal disease. However, the cause of symptoms was not the same in both. The second patient exhibited uremia-like symptoms on the first postwound day, when the nonprotein nitrogen concentration in the serum was 60 mg. per 100 cc. This syndrome did not appear in the first patient until many days had passed and the nonprotein nitrogen concentration was greater by severalfold. The time of onset of symptoms is of cardinal importance in assessing the cause of symptoms. If the duration of oliguria is unknown, it is usually correct to assume that oliguria dates from the time of injury. If this date is unknown, the duration of oliguria can be estimated accurately enough for these purposes by the nonprotein nitrogen concentration. Although considerable variation occurs, nonprotein nitrogen concentration usually rises at approximately 40 mg. per 100 cc. per day in a severely traumatized patient with oliguria. The substance that causes the symptoms of uremia is unknown, but it accumulates in the serum and is dialyzed from the serum at approximately the same rate as nonprotein nitrogen. The similarity in behavior of the two substances is limited but can be employed for clinical evaluation. Severe symptoms of acute uremia rarely appear until the nonprotein nitrogen concentration exceeds 200 mg. per 100 cc. and usually not until it is considerably higher. Other causes should be sought to explain the occurrence of uremia-like symptoms in a patient with less severe azotemia.

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[3] Herndon, R. F.; Meroney, W. H., and Pearson, C. M.: The Electrocardiogram and Acute Renal Insufficiency, Am. Heart J., to be published.

[4] Meroney, W. H.: The Phosphorus to Nonprotein Nitrogen Ratio in Plasma as an Index of Muscle Devitalization During Oliguria, Surg., Gynec. & Obst. **100**: 309 (March) 1955.

Imbalance of blood chemicals other than the unknown substance noted above usually produces no symptoms until the degree of imbalance is severe. Acidosis increases gradually to the point at which hyperpnea appears, usually when the serum bicarbonate concentration falls below 15 mEq. per liter. Hyperphosphatemia appears to be harmless except for its association, perhaps etiologically, with hypocalcemia. When phosphorus concentration is high, as in patients with necrotic tissue, calcium concentration is low. Frank tetany is unusual, probably because the acidosis increases the dissociation of calcium ion from the protein-bound moiety. Parestheses and less overt symptoms of hypocalcemia are most often seen when hyperpotassemia is also present, and these symptoms were formerly attributed to potassium. Because of the mutual antagonism between calcium and potassium, the symptoms of hypocalcemia are exaggerated by hyperpotassemia, and some of the unexplained convulsions in uremic patients may be related to this phenomenon. Hyperpotassemia alone does not produce symptoms until shortly before it reaches a degree sufficient to stop the heart; however, hypocalcemia will be associated with hyperpotassemia unless calcium is infused continuously. Hyponatremia usually is not severe enough to produce symptoms, although it may contribute to the symptomatology of water intoxication. Water intoxication is a common complication of uremia, although it reflects the behavior not of the disease but of the doctor. Meticulous attention to the details of fluid balance is of paramount importance in management. Distortions of the normal pattern of serum electrolytes, like the onset of symptoms, appear late and progress gradually in a well-managed and uncomplicated case of acute renal failure.

The surgeon who undertook débridement in patients such as in the second case required the courage to assume responsibility for unfavorable operative statistics and the conviction that there was no other hope for survival of the patient. Procrastination, compromise, or preoccupation with the urinary volume and consequent transfer of an undébrided patient to the renal center resulted in a fatality. If the deterrent to operation was potassium intoxication, massive infusions of calcium (100 to 300 cc. of 10% calcium gluconate solution) were effective in antagonizing the effects of potassium until surgery could be completed in some cases. If the devitalized tissue could be excised completely, the management of renal failure was relatively simple, even leisurely. The uremia-like syndrome that occurred one or two days following the onset of oliguria was not a result of uremia. It was qualitatively similar to uremia but was distinguished from it by the quantitative differences in blood chemistry and by the time of occurrence. Therapy designed to correct the manifestations of uremia was ineffective in this condition. The etiology of this syndrome in battle casualties in Korea was infection in traumatized tissues, and the only effective treatment was early and radical débridement. If the patient was a poor surgical risk and operation was deferred, further deterioration rather than improvement was the rule.

CLINICAL NOTES

FOOTBALL HEMATURIA

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and
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The football player has hematuria. Player, parents, and coach want to know: Is it serious? Will there be permanent damage? When may he safely play again? Many physicians face these questions each fall and find it difficult to formulate a satisfactory answer. Ultraconservatism may evoke critical comment from ardent team supporters who want the star player back in action. On the other hand, the parents naturally fear that the physician has submitted to pressure if their son returns to active play shortly after having had hematuria. It is known that exercise decreases urinary volume, diminishes renal plasma flow, and decreases chloride concentration.[1] It is also well established that albuminuria may follow exercise.[2] Amelar and Solomon [3] have reported microscopic hematuria in 73% of boxers immediately after a bout; however, information is not available on incidence and significance of hematuria in athletes participating in strenuous exercise and sustaining repeated trauma for several consecutive months. This study was made to obtain data on these points.

METHOD

The members of the varsity football team of a major university were subjects for the study. Urine was secured from each man the day he reported for training. A specimen was then obtained on each of three consecutive days. Through the remainder of the season urine was collected each Wednesday after practice and each Saturday after the football game. Three postgame collections were missed because of distance. Urine was collected within 30 minutes after each of seven games. Occasional specimens were missed either because of injury or because an individual could not void. Player interest and cooperation were excellent. The fresh urine was examined, a record being made of the color, turbidity, pH, specific gravity, albumin level, sugar level, and results of microscopic examination. A total of 874 urine specimens were collected from 58 individual players during the season. Men dropped from the squad, out of action because of prolonged injury, or failing to make the traveling team reduced the number of regular biweekly urine contributors to 37.

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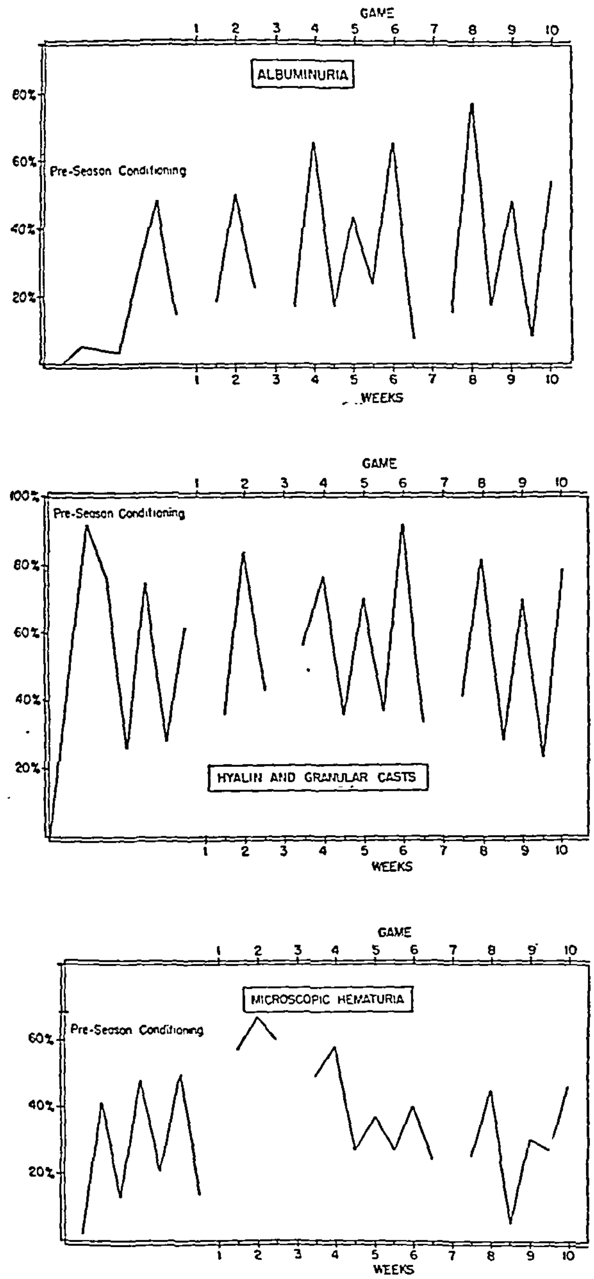
[1] Merrill, A. J., and Cargill, W. H.: The Effect of Exercise on the Renal Plasma Flow and Filtration Rate of Normal and Cardiac Subjects, J. Clin. Invest. **27**: 272, 1948. Barclay, J. A.; Cooke, W. T.; Kenney, R. A., and Nutt, M. E.: The Effects of Water Diuresis and Exercise on the Volume and Composition of the Urine, Am. J. Physiol. **148**: 327, 1947.

[2] Abrahams, A.: *Physical Exercise: Its Clinical Associations (First Lumleian Lecture)* Lancet **1**: 1133, 1951.

[3] Amelar, R. D., and Solomon, C.: Acute Renal Trauma in Boxers, J. Urol. **72**: 145, 1954.

RESULTS

Except for one man with an occasional red blood cell per microscopic field, each man's urine was normal when he reported to training camp. The exercises of the preliminary conditioning program produced albuminuria, casts, and microscopic hematuria in many of the players (see chart). With the beginning of body contact work, urinary abnormalities increased. Throughout the remainder of the season the percentage of abnormal urine specimens reached a peak after Saturday games. There was usually a drop in this percentage at midweek. One player had microscopic hematuria in 19 of 24 specimens examined. All of the others bled intermittently, the next highest rate being hematuria in 11 of 22 specimens. Hematuria sufficient to grossly discolor the urine was noted in six men. None of these men withdrew from competition, and all promptly reverted to "football normal" within three to four days. No man had gross hematuria on more than one occasion. The rapidity with which the urine returned to normal was remarkable. A specimen obtained Wednesday afternoon following a hard scrimmage would often be slightly cloudy, contain two to five red blood cells per high-power field, occasional leukocytes, and a moderate number of hyaline and granular casts. If this same player sat on the bench during Saturday's game his postgame urine specimen was usually absolutely normal. The following cases illustrate patterns of hematuria observed during the 1954 season.



Urinary findings during the preseason conditioning period and the regular season in members of a varsity football team.

REPORT OF CASES

CASE 1.—Normal initial urine was followed by microscopic hematuria in three out of seven specimens. Gross bleeding on one occasion decreased to microscopic hematuria three days later. Blood was noted microscopically in 5 of the next 12 urine specimens.

CASE 2.—Normal initial urine was followed by microscopic hematuria in 6 out of 13 specimens. Gross bleeding was followed by a clear urine microscopically four days later. Microscopic hematuria was noted in one of the next seven specimens.

CASE 3.—Normal initial urine was followed by microscopic hematuria in 16 out of 21 specimens. Gross bleeding on one occasion was followed by microscopic hematuria in each of the last two specimens.

CASE 4.—Normal initial urine was followed by microscopic hematuria in 5 out of 14 specimens. Gross hematuria gradually subsided for three days. There was microscopic hematuria in three of last five specimens.

CASE 5.—Normal initial urine was followed by microscopic hematuria in 6 out of 17 specimens. Gross bleeding was noted for one day. Microscopic hematuria was noted in two of remaining three specimens.

CASE 6.—Normal initial urine was followed by microscopic hematuria in one out of eight specimens. Gross bleeding was noted on one day. Microscopic hematuria was then noted in four of the next seven specimens. This player then became inactive because of other injuries.

SUMMARY

It has been found that hematuria frequently accompanies participation in football. Microscopic bleeding may accompany the strenuous physical exertion of preseason conditioning exercises. A moderate increase in the number of players with microscopic hematuria occurs with body contact drills. A definite peak in the hematuria incidence occurs after each football game. There is no increase in the postgame hematuria rate as the season progresses. Gross hematuria was noted in the urine of 6 of 37 men followed closely throughout the football season in 1954. Both the gross and microscopic bleeding cleared promptly with rest. We found no reason to restrict activity because of microscopic hematuria. In fact, if such had been carried out the entire team eventually would have been benched, for no player failed to develop microscopic hematuria. Similarly, when a single episode of gross hematuria subsided to microscopic levels within 24 to 72 hours, there seemed to be no harm in resumption of full activity.

SEVERE ADRENOCORTICAL INSUFFICIENCY FOLLOWING JOINT MANIPULATION

REPORT OF PATIENT RECEIVING CORTISONE ORALLY

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The widespread use of adrenal steroids as therapeutic agents has demonstrated that these hormones, if given long enough in sufficient dosage, consistently induce adrenal atrophy and suppress pituitary and adrenocortical function.[1] Less well known, perhaps, is that adrenocortical and pituitary function may also be impaired for some time after corticotropin has been administered.[2] Changes may persist for as long as six months after therapy has been stopped. Eventually, however, function returns to normal, and the interlude of hormone-induced adrenocortical insufficiency is usually not of serious importance. If an episode of stress should supervene at this time, however, the consequences may be grave. To maintain homeostasis under stress, increased amounts of adrenocortical hormones are needed.[3] A normal adrenal cortex responds with a manifold increase in hormonal output [4]; the adrenal cortex that has been suppressed by prolonged administration of exogenous adrenal hormones cannot always respond adequately. Fraser and others,[5] and Lewis and others [6] have reported cases of fatal adrenocortical insufficiency precipitated by surgical procedures in patients who have received cortisone for prolonged periods. Salassa and his colleagues have reported two fatal cases; one of these was of particular interest because the stress that precipitated the fatal outcome was a minor surgical procedure, a bunionectomy, and because oral therapy with cortisone had been discontinued four and a half months prior to surgery and intra-articular administration of hydrocortisone 15 days prior to surgery.[7] We wish to report a case of severe and nearly fatal adrenocortical insufficiency that occurred in a patient who had been receiving cortisone orally after manipulation of a knee joint with the patient under thiopental (Pentothal) anesthesia.

REPORT OF A CASE

A white man was first seen in 1946 at the age of 13 years because of low back pain and stiffness of approximately 3 years' duration. For about two years his parents had noticed that he would limp on his left leg when tired. Examination at this time revealed tenderness over the lumbosacral area and a moderate limitation of flexion, abduction, and external rotation of both hips. X-rays of the pelvis revealed some widening and fuzziness of the sacroiliac joint margins. In the next six months he developed persistent pain, stiffness, and swelling of the knees, ankles, and feet. One year later the clinical picture was typical of severe rheumatoid spondylitis with peripheral joint involvement. At this time, x-rays revealed that the sacroiliac joints were obliterated and that the hip joints had become markedly narrowed. Despite intensive physical therapy and a host of medicaments, including salicylates, streptococcic vaccine, vitamins, gold salts, and corticotropin, progression of the disease was not checked. By 1950 the spine was rigid except for approximately 30 degrees of flexion-extension motion of the neck; the hip, knee, ankle, tarsal and metatarsal joints were badly damaged. The patient could wiggle his toes a bit, but otherwise the lower extremities were completely ankylosed.

In January and February, 1951, cup arthroplasties were performed on the hips. The arthroplasty on the left hip was revised in December, 1951, because of bony proliferation around the joint. In March, 1953, wedge osteotomies of both ankles were done to correct plantar flexion deformities of the feet. By November, 1953, the patient was able to walk fairly well with the aid of crutches, but, because of ankylosis of knees and ankles, he found it difficult to climb steps. In an attempt to improve ambulation, an arthroplasty of the left knee was performed in November, 1953, with the use of a fascia lata transplant. The knee remained quite painful postoperatively for weeks, and development of motion was slow despite intensive physical therapy. Manipulations of the knee joint were done in December, 1953, and again in January, 1954; on both occasions 25 mg. of hydrocortisone acetate was injected into the joint. Little improvement in motion or relief of pain resulted from these procedures. It should be emphasized that the patient tolerated these manipulations and the previously described major surgical procedures very well.

On Jan. 16, 1954, oral therapy with cortisone acetate was started in doses of 75 mg. daily for seven days; the dose was then reduced to 62.5 mg. daily. Though this medication did not improve the range of motion, the patient felt very definitely that it relieved the pain and stiffness to a substantial degree; it was, therefore, continued. On Feb. 16, 1954, at which time the patient had received approximately 1.9 gm. of cortisone, another manipulation of the left knee was performed with the patient under thiopental anesthesia. Breakfast and cortisone were withheld on this morning. Because of a heavy surgical schedule, the procedure was deferred until early afternoon. The period of anesthesia was approximately five minutes, and the actual manipulation required only a minute. Recovery from the anesthesia was somewhat slow. At 6 p. m. it was noted that the patient was awake and alert but nauseated. He therefore omitted his evening meal and his evening dose of cortisone. At midnight he talked to the ward nurse and apparently seemed to be all right. At 2 a. m. Feb. 17, the attention of the nurse was drawn to the patient because of his stertorous respirations. Examination revealed that he was deeply comatose, very cyanotic, and drenched with cold sweat. There was a conjugate deviation of the eyes upward and to the right; pulse rate was 140 per minute and was weak and thready. Blood pressure was unobtainable by auscultation; by palpation, systolic pressure was judged to be approximately 90 mm. Hg. Hoffman's signs were elicited bilaterally. Since the toe joints were ankylosed, plantar responses could not be tested. Heart tones were loud, and rhythm was regular; the lung fields were clear to auscultation. Total eosinophil count at 8 a. m. was zero; at 2 p. m., 240 per cubic millimeter;

From the medical and surgical services of the Los Angeles Orthopedic Hospital.

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2. Eliel, L. P.; Pearson, O. H., and West, C. D.: Excessive Losses of Sodium, Chloride, and Water After Administration of Cortisone or ACTH, Suggesting Transient Adrenocortical Insufficiency, abstracted, J. Clin. Invest. **30**: 637, 1951.
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4. Thorn, G. W.; Jenkins, D., and Laidlaw, J. C.: The Adrenal Response to Stress in Man, in Recent Progress in Hormone Research, *Proceedings* of the Laurentian Hormone Conference, vol. 8, Pincus, G., editor, New York, Academic Press, Inc., 1953, pp. 171-215.
5. Fraser, C. G.; Preuss, F. S., and Bigford, W. D.: Adrenal Atrophy and Irreversible Shock Associated with Cortisone Therapy, J. A. M. A. **149**: 1542 (Aug. 23) 1952.
6. Lewis, L., and others: Fatal Adrenal Cortical Insufficiency Precipitated by Surgery During Prolonged Continuous Cortisone Treatment, Ann. Int. Med. **39**: 116, 1953.
7. Salassa, R. M.; Bennett, W. A.; Keating, F. R., Jr., and Sprague, R. G.: Postoperative Adrenal Cortical Insufficiency: Occurrence in Patients Previously Treated with Cortisone, J. A. M. A. **152**: 1509 (Aug. 15) 1953.

and at 4 p. m., 70. Analysis of serum on Feb. 17 and Feb. 18 showed sodium 149 mEq. per liter, potassium 4.2 mEq. per liter, and chloride 111 mEq. per liter. Carbon dioxide content on Feb. 17 was 22 mEq. per liter (normal value 26-28 mEq. per liter). The 17-ketosteroid value on Feb. 22 was 2.2 mg.

Treatment.—Oxygen was given by nasal catheter. An infusion of 5% glucose in isotonic sodium chloride containing 4 cc. of 0.2% solution of levarterenol bitartrate (Levophed) per liter was run continuously for 36 hours. Also, an infusion of 5% glucose in distilled water containing 80 U. S. P. units of corticotropin per liter was started in the other arm at 4 a. m., Feb. 17, and allowed to run very slowly, so that approximately 80 units were administered in 24 hours. This solution was given for four days without stopping. Since a preparation of cortisone to be given intramuscularly was not immediately available, four 25 mg. cortisone tablets were crushed and put in the rectum. Four hours later when the preparation for parenteral use was obtained, 200 mg. was given intramuscularly, and 100 mg. was given daily for the next five days. Ten cubic centimeters of adrenal cortical extract (Eschatin) was given on the first day of treatment. Oxytetracycline, 500 mg. intravenously, and penicillin, 600,000 units intramuscularly, were given daily for six days.

Course.—For 24 hours the patient seemed moribund. Cyanosis was slow to disappear, even with oxygen therapy. His temperature rose to 106.8 F, and the blood pressure was unobtainable by auscultation. The pulse remained weak and varied from 140 to 160 per minute. Twitchings and muscle spasms of the jaws, arms, and legs developed, which at times suggested decerebrate rigidity. These were not modified in any way by the intravenous administration of calcium gluconate. Then, over a period of 12 hours, the muscular phenomena stopped, the temperature dropped to 101 F, and the blood pressure slowly rose to 90/70 mm. Hg. The patient gradually regained consciousness. No alterations in intellect or personality were observed, and there were no detectable neurological residual effects. He made a rapid recovery in well-being and strength. At the end of a week he was up in a wheel chair and, so far as we could determine, was none the worse for his experience.

COMMENT

The following data, in our opinion, strongly suggest that the profound shock noted in this case was due to adrenocortical insufficiency: 1. The patient had received 1.9 gm. of cortisone in one month; this amount is more than sufficient to produce adrenal atrophy and suppress pituitary and adrenal function. 2. He received no cortisone for 18 hours prior to the manipulation and for 30 hours prior to the onset of shock. 3. Normal eosinophil counts were observed on two occasions several hours after intravenous therapy with corticotropin was started. 4. The level of the urinary 17-ketosteroids was very low, even after four days of intense adrenocortical stimulation by corticotropin intravenously.

The neurological signs observed in this patient are somewhat unusual in adrenal crises and have suggested to several observers the possibility of fat embolism or thromboembolism. It is our feeling, however, that the prompt and complete recovery without neurological deficit makes occurrence of a cerebrovascular accident unlikely. It should be recalled that the patient was very cyanotic at the time of shock and this cyanosis was slow in disappearing. We believe the muscle twitchings and spasms can perhaps be attributed to cerebral anoxia.[8]

Obvious errors in management of this case were withholding cortisone before manipulation and failing to give it promptly postoperatively by the intramuscular route when it became apparent that the patient could not take it orally (hydrocortisone preparations to be given intravenously were not available at this time). These errors were, in part, due to the false assumption that such a minor procedure as joint manipulation, done with the patient under thiopental anesthesia, would not constitute a serious stress.

Thorn and his colleagues have remarked that adrenal crises are more common in those who have received cortisone orally.[9] This is due to its short period of activity. It reaches its peak of effect approximately 4 hours after ingestion, and, after 12 hours, its action is largely dissipated. It cannot, therefore, be expected to provide a sustained protection against adrenocortical insufficiency throughout the course of a surgical procedure, particularly when medicaments to be given orally must be withheld postoperatively for many hours. Anorexia, nausea, and vomiting, furthermore, are common symptoms in many conditions of stress and frequently preclude the continuance of oral therapy with any medicament. The patient who has been receiving cortisone orally for instance, may not be able to continue taking it at a time when he greatly needs it. This would, of course, invite disastrous occurrences as described above. We believe that any patient receiving cortisone orally upon whom even minor surgical or dental procedures are contemplated should instead be given a preparation for intramuscular use two or three days prior to surgery. Furthermore, unless the surgical procedure is a very minor one, supplementary amounts of adrenal hormones, as outlined by Salassa and others, should be given preoperatively and postoperatively.[7] Certain precautionary measures may enable the patient to avoid an adrenal crisis. Prolonged fasting of such patients should be avoided. If parenteral administration of fluids is required, 5% glucose in isotonic sodium chloride should be used, rather than 5% glucose in distilled water. Morphine and its derivatives should be used sparingly, if at all. Patients should be watched very closely, particularly during the first 24 hours after surgery; temperature, blood pressure, and pulse rate should be recorded hourly during this period.[7] If an injury or serious illness occurs in a patient taking cortisone orally and if there is any doubt that he will be able to continue taking the medicament orally, it should be given by the intramuscular or intravenous route without delay.

511 S. Bonnie Brae St. (57) (Dr. Harnagel).

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[8] Courville, C. B.: Pathology of the Central Nervous System: A Study Based upon a Survey of Lesions Found in a Series of Forty Thousand Autopsies, ed. 3, Mountain View, Calif., Pacific Press Publishing Association, 1950, p. 439.

[9] Thorn, G. W., and others: Medical Progress: Pharmacologic Aspects of Adrenocortical Steroids and ACTH in Man, New England J. Med. 248: 323, 1953.

Bronchography.—Bronchiectasis may be a localized disease involving only a portion of a single lung segment or subsegment. Localized bronchiectatic dilatations often fail to cast shadows on routine chest films. At other times the localized bronchial dilatations become filled with fluid and surrounded by zones of pneumonitis, producing circumscribed, rounded shadows on the usual chest films. These nodular densities may simulate tumors of the lung. The studies carried out for the evaluation of circumscribed pulmonary densities frequently do not include bronchography. Bronchography can reveal graphically that pulmonary "coin" lesions noted on ordinary chest roentgenograms may be manifestations of localized bronchiectasis. This simple procedure may clarify the diagnosis and indicate the treatment required. Many unnecessary exploratory thoracotomies may thereby be obviated.—B. Schwartz, M.D., and H. L. Katz, M.D., Localized Bronchiectasis Simulating Pulmonary Neoplasms, *Annals of Internal Medicine,* July, 1955.

ACUTE LOW BACK PAIN

Robert P. Kelly, M.D.
and
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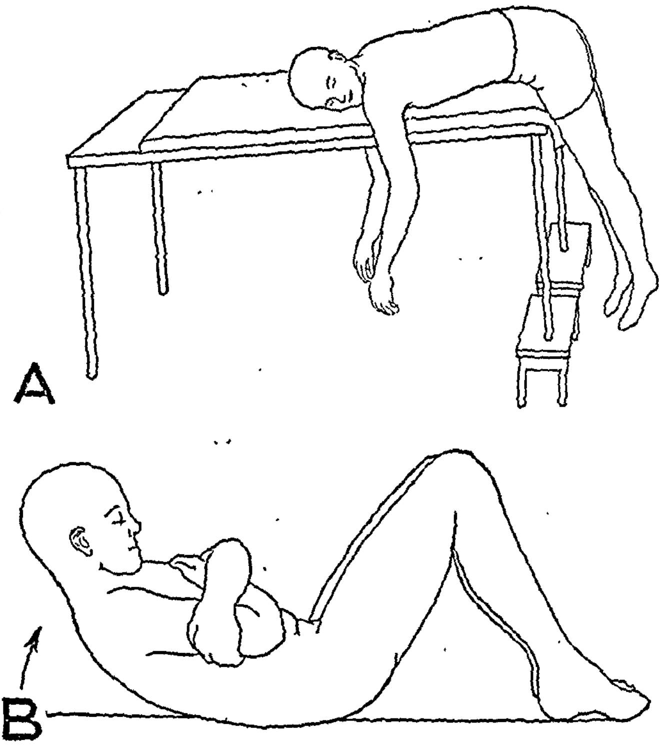
Orthograde posture in man is possible only with the cervical and lumbar curves of the spine steadied by the powerful sacrospinalis muscle groups. In man's transition from the more primitive postures only the rectus abdominis muscles remain to flex the lumbar spine and counter those forces tending toward further extension. In present-day sedentary activities, the abdominal muscles are seldom used for function other than to retain abdominal viscera; yet in sitting, in standing, and in work and play the lumbar spine and lumbosacral joint are constantly subjected to hyperextension. Williams,[1] Thieme,[2] and others point to hyperextension as one of the important precipitating factors in lumbar breakdown in man, including protruded intervertebral disk, spondylolisthesis, and the poorly understood syndrome often called "lumbago," "sacroiliac strain," or, for want of a better term, the lumbosacral syndrome. Of the latter group we have had particularly encouraging results with conservative treatment and feel its clinical recognition and simplicity of treatment demand emphasis.

These patients, predominantly in the fourth through the sixth decades of life, give a fairly consistent history of acute low back pain, described as a "catch" in the region of the lumbosacral joint and usually initiated by an unusual torsion or hyperextension of the lower spine. While the precipitating effort may be trivial, the onset of symptoms is frequently dramatic in suddenness and severity. It may follow the insult by several hours. Once the attack is started, slight movement may initiate paroxysms of excruciating pain. This is accompanied by spasm of the back muscles and may radiate out across one buttock. It is aggravated by prolonged sitting, standing, and recumbency; and a general attitude of flexion affords the greatest relief. Greatest pain may be experienced when, after prolonged sitting, the patient moves to resume the erect posture. This latter we consider one of the prime characteristics of the clinical picture.

As the patient gives the history, he sits squarely on his buttocks or shifts from side to side. This is in contrast to patients with the protruded intervertebral disk syndrome, in which case the weight often is thrust to the opposite buttock. On standing, there is usually spasm of the lumbar erector spinae muscles. The crest of the ilium may be elevated on the side of pain with forward rotation of the pelvis on the same side. There is marked limitation in forward and lateral flexion, with the pain exacerbated by flexion away from the side of pain. Point tenderness is found over one or both of the lumbosacral joints. The deep tendon reflexes of the lower extremities are normal, and there are no sensory changes. X-rays of the lumbar spine and lumbosacral joint are usually read as negative. Occasionally a slight narrowing of the lumbosacral or L_4-L_5 disk space is seen, without sciatic nerve root compression on myelography. To us the clinical picture is in sharp contradistinction to that of the protruded intervertebral disk syndrome. After several days of persistent back pain, victims of the lumbosacral syndrome may develop leg pain that assumes a variable importance. Nonetheless, this leg pain subsides rapidly in response to the measures here advocated. The clinical picture is quite characteristic, although back pain from prostatic disease, multiple myeloma, and metastatic tumor of the spine sometimes resembles it.



A, hanging position. *B*, Williams abdominal muscle exercise.

Initial treatment should be aimed at relief of muscle spasm. In most cases this can be accomplished by a maneuver we call "hanging" (see figure, *A*). The diagram shows the proper attitude of the patient over a table, elevated at one end to prevent the subject from sliding backwards and padded to protect the inguinal crease and genitals. The desired elevation can usually be obtained by placing two soft-drink crates under each leg of the elevated end, but this will vary slightly with the body build of the patient. An ordinary examining table with both legs of one end supported by an examining room foot stool constitutes the ideal "hanging" apparatus. "Hanging" should be maintained for at least 10 minutes and should be repeated as often as necessary to relieve pain—in some cases every hour. Once the acute back pain and muscle spasm have subsided, it is no longer of value. With unusually severe symptoms, hospitalization is desirable so that skeletal muscle relaxants can be given in addition to supervision and encouragement of the exercises. For a relaxant we have used a slowly absorbed intramuscular preparation of tubocurarine chloride pen-

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[1] Williams, P. C.: The Conservative Management of Lesions of the Lumbosacral Spine, the American Academy of Orthopaedic Surgeons Instructional Course Lectures, Ann Arbor, Mich., J. W. Edwards, 1953, vol. 10, pp. 90-121.

[2] Thieme, F. P.: Lumbar Breakdown Caused by Erect Posture in Man, Anthropological Papers No. 4, Michigan University Museum of Anthropology, Ann Arbor, Mich., University of Michigan Press, 1950.

tahydrate (Tubadil), which is supplied in concentrations of 25 mg. per cubic centimeter. The average daily maintenance dose has been 1 cc.

Once the patient is convinced of pain relief with the "hanging" maneuver, the abdominal muscle exercise must be started. A multitude of daily gymnastics discourage the average victim. We have emphasized only the exercise shown and found the results quite adequate (see figure, *B*). This exercise will be recognized as one for the abdominal muscles as advocated by Williams. It is recommended that the exercise be done once a day after arising from bed in the morning. The floor affords a more uniform platform than the bed, and flexion of the knees is essential. Thirty repetitions of the exercise are done in groups of 10 each. A rest of one or two minutes is taken between each group of 10. The initial effort, as will be described, is minimal, and there is progressive effort with each successive group of 10 repetitions. On the first 10, the neck is merely flexed to bring the chin as near to the sternum as possible. In the successive groups this likewise constitutes the initiating movement of the exercise. Added to it in the second group of 10 is an effort to raise the shoulders slightly from the floor. With the third group of 10 this effort is extended so that the shoulders are elevated as far toward the sitting position as possible. The rhythm of the exercise is slow and deliberate. Lurching movements should be discouraged. As the patient's capacity to perform the exercise improves, the starting effort might be as vigorous as the effort made at first in the final group of 10. In most cases this exercise, persisted in daily even after complete disappearance of symptoms, is sufficient to maintain the desired tone of the rectus abdominis muscles.

Adjuncts to the abdominal muscle exercises are instructions in daily postural attitudes that avoid lordosis of the lumbar spine, as well as weight reduction in the obese patients. There will be some cases in which the exercise will not be feasible due to one cause or another. Here the Williams lumbar flexion brace has been found useful, but should be avoided when the proper rectus muscle tone can be developed. There still remains a small group of patients who fall between the pattern of sciatic nerve root compression and the lumbosacral syndrome, e. g., those with sciatic radiation of pain without neurological derangement and with negative myelograms. Some can avoid surgery by continuous and wholehearted efforts at the measures just described. Others will eventually come to spinal fusion. However, we feel the former measures should always come first and, if vigorously emphasized, will reduce the number of patients with low back pain who are subjected to surgery or who are diagnosed as psychoneurotic and who resort commonly to treatment by the cults.

SUMMARY

A clinical entity of acute low back pain that we consider common and demanding of emphasis can be treated effectively by the family doctor. By shouldering this responsibility he will save the patient from the hazards of the cultist and unnecessary consultation with specialists.

BASILAR RALES IN MYOCARDIAL INFARCTION

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and
Nancy T. Caputo, M.D., Detroit

The typical case of myocardial infarction, with severe chest pain, drop in blood pressure, and cardiac electrocardiographic findings is a textbook diagnosis. Further examination in such cases is usually not necessary. It is the atypical case of infarction that offers a challenge in diagnosis. By chance, one of us (J. M. K.) had occasion to examine four patients with atypical but similar cases of myocardial infarction. The similarity lay in the fact that none of the patients described the usual chest pain, but all had midabdominal pain, drop in blood pressure, and left-sided basilar pulmonary rales.

REPORT OF CASES

Case 1.—A 46-year-old white man complained of nausea, vomiting, diarrhea, and mild midabdominal pain. Physical examination revealed a blood pressure of 90/60 mm. Hg that at first was attributed to peripheral vascular collapse; however, there were also profuse subcrepitant basilar rales on the left that could not be explained on this basis. The patient was hospitalized when he failed to respond to treatment for a gastrointestinal upset. His symptoms abated in the hospital, but the hypotension persisted. An electrocardiogram showed a typical posterior myocardial infarction. He made an uneventful recovery.

Case 2.—A 63-year-old white woman, with complaints of mild epigastric pain, nausea, and vomiting, was seen one week after the patient in case 1. Her symptoms were unimpressive, but physical examination revealed many subcrepitant inspiratory rales at the base of the left lung, with an occasional rale at the base of the right lung and a blood pressure of 100/70 mm. Hg. With case 1 in mind, the patient was hospitalized as an emergency patient. An electrocardiogram showed a posterolateral myocardial infarction. The rales persisted for seven days. On the seventh day the patient was found dead in bed by a nurse on a routine ward check. Postmortem examination showed an extensive posterolateral infarction. Grossly, both lungs appeared edematous, the left more so than the right.

Case 3.—About a month after seeing the patients in cases 1 and 2 we were called to see an elderly couple who were both complaining of supposed "food poisoning" that followed the ingestion of potato salad at a picnic. The symptoms consisted of nausea, vomiting, and mild abdominal distress; however, the man had a blood pressure of 98/60 mm. Hg and many basilar pulmonary rales on the left. An electrocardiogram taken at home revealed a posterior myocardial infarction. He recovered completely with routine care at home.

Case 4.—A 69-year-old Negro man complained of moderately severe epigastric pain, nausea, and vomiting. His history revealed a peptic ulcer with frequent acute exacerbations. The attending physician, not satisfied with the patient's response to ulcer management, requested consultation. The only abnormal physical finding was that of left-sided pulmonary basilar rales. An electrocardiogram showed an anterior myocardial infarction. He was discharged in three weeks after a good response to routine care.

The fact that diagnosis was made in these four cases because of the suspicious finding of left-sided basilar rales prompted us to reexamine 200 cases of myocardial infarction. Seventy-five patients were followed personally, and 125 cases were reviewed from the records of Harper

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From [illegible] Department of [illegible]y, Harper Hospital.

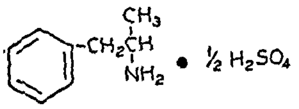
plication. Results of studies with experimental animals indicate that it has a low toxicity and exhibits about one-half the antispasmodic activity of atropine. As with other cycloplegic-mydriatic agents, caution should be observed in patients with high intraocular pressure.

Dosage.—Cyclopentolate hydrochloride is administered only in the form of ophthalmic solutions for instillation into the conjunctival sac. For refraction in Caucasians, a dose of two drops of a 0.5% solution in each eye (each drop instilled at 5 minute intervals) for adults produces maximal cycloplegia in 30 to 60 minutes. Complete recovery occurs within 24 hours. The administration of one or two drops of 1 to 2% pilocarpine nitrate reduces recovery time to 6 hours or less. In deeply pigmented eyes of dark-skinned persons, satisfactory cycloplegia may be obtained with the 0.5% solution in about two-thirds of the cases. A 1% solution usually produces maximal cycloplegia in Negro patients; instillation of a 2% solution results in return of reading ability in 6 hours. For children, pretreatment with cyclopentolate on the day prior to examination is not usually necessary. Normally one or two drops of a 0.5 or 1% solution is instilled in each eye at the time of refraction, followed 10 minutes later by a second such application. This regime will produce satisfactory cycloplegia in all but the most refractory cases. If pretreatment in such individuals seems desirable, one or two drops of 1% cyclopentolate may be instilled the evening prior to examination. Only in children with extremely dark irises has pretreatment with atropine been occasionally necessary.

For producing paralysis of the sphincter to correct spasm caused by inflammation, one or two drops of a 0.5% solution is instilled every 6 to 8 hours. For breaking or preventing lenticular adhesions secondary to infections, one or two drops of a 0.5% solution is instilled, followed in 6 hours by the instillation of 2% pilocarpine nitrate. Such alternate treatment should be carried out every 24 hours.

Schieffelin & Company cooperated by furnishing scientific data to aid in the evaluation of cyclopentolate hydrochloride.

Dextro Amphetamine Sulfate, U. S. P.—$(C_9H_{13}N)_2 \cdot H_2SO_4$.—M.W. 368.50.—*d*-1-Phenyl-2-aminopropane sulfate.—The dextrorotatory isomer of amphetamine sulfate.—The structural formula of dextro amphetamine sulfate may be represented as follows:



Actions and Uses.—Dextro amphetamine sulfate has the same actions and uses as the racemic compound, amphetamine sulfate, but exerts a predominantly greater stimulating effect on the central nervous system. Because of its relatively weak peripheral activity, it is generally regarded as less toxic than previously introduced sympathomimetic amines that are commonly employed clinically. Thus, it seldom gives rise to undesirable side-effects such as mydriasis, tremor, tachycardia, and changes in blood pressure. Dextro amphetamine sulfate, therefore, is useful by oral administration for the treatment of narcolepsy and postencephalitic parkinsonism, and as an adjunct in the management of acute and chronic alcoholism and alcoholic psychoses of recent origin. It is employed also for the symptomatic treatment of depressive states, especially to elevate the mood in early, mild, psychogenic depression characterized by apathy and psychomotor retardation and, to a variable or lesser extent, in psychoneuroses, and in severe depressions involving certain major psychopathic conditions of institutionalized patients. The drug also may be used as a stimulant in the management of certain behavior problems of children, but it is not useful in schizophrenics and has an unfavorable effect on children with psychopathic personalities. The appetite-depressant effect of the drug also is useful as an adjunct in the dietary management of obesity.

Dextro amphetamine sulfate should not be employed as a stimulant by normal persons to mask fatigue caused by physical exertion or overwork. It should be used with caution in patients hypersensitive to sympathomimetic amines, those with coronary or cardiovascular disease, and those with severe hypertension. It is contraindicated in the presence of hyperexcitability and agitated prepsychotic states. If administered too late in the day, the drug may interfere with sleep.

Dosage.—Dextro amphetamine sulfate is administered orally. In the treatment of depressive states or alcoholism, the usual daily dosage ranges from 5 to 15 mg., administered as ordinary tablet or liquid medication in two or three doses at intervals of either 4 or 6 hours. The initial dose should be given on awakening so as to complete the total daily amount early in the day. For narcolepsy, the usual daily dosage for adults ranges from 10 to 50 mg., preferably in divided amounts; for postencephalitic parkinsonism, the daily dosage is usually 10 to 25 mg., also in divided amounts. To control appetite in obesity, the usual daily dosage for adults is 15 to 30 mg. in three divided doses, taken 30 to 60 minutes before meals. Light sleepers may take the final dose early (4 p. m.).

For children with behavior problems, the suggested dosage is 5 to 10 mg. in the morning and 2.5 to 5 mg. at noon. In all cases, the dosage should be individualized; it is advisable to begin with an initial dose of 5 mg. for adults or 2.5 mg. for children, followed by either one or two additional doses of the same amount. Dosage then can be increased to obtain the desired effect; the initial daily dose may be increased at first, leaving the repeated doses at the original level so that the major quantity is taken during the first half of the day. If necessary, the later doses may be equalized gradually to provide a uniform action.

A capsule containing 10 or 15 mg. of dextro amphetamine incorporated into variably coated pellets that afford continuous release of the drug over a period of 8 to 10 hours, thus prolonging the therapeutic effect for 10 to 12 hours, may be administered once daily in the morning to adults in place of ordinary oral medication in divided amounts.

Smith, Kline & French Laboratories cooperated by furnishing scientific data to aid in the evaluation of dextro amphetamine sulfate.

Erythromycin Ethyl Carbonate.—Erythromycin ethyl carbonate is the ethyl carbonate ester of erythromycin, an antibacterial substance produced by the growth of

Streptomyces erythreus Waksman. The structural formula of erythromycin ethyl carbonate has not been established.

Actions and Uses.—Erthromycin ethyl carbonate, a salt of erythromycin, shares the actions and uses of the parent antibiotic. (See New and Nonofficial Remedies 1955, under the monograph on erythromycin.) The ethyl carbonate salt is suitable for the extemporaneous preparation of flavored suspensions of the drug for oral administration.

Dosage.—Erythromycin ethyl carbonate is administered orally in doses expressed in terms of erythromycin base. For adults, a dose equivalent to 200 mg. of erythromycin every 4 to 6 hours is considered adequate. The optimal dosage for children has not been finally determined, but a dose equivalent to 5 mg. of erythromycin per pound (about 11 mg. per kilogram) of body weight administered every 6 hours is considered reasonable.

Eli Lilly & Company cooperated by furnishing scientific data to aid in the evaluation of erythromycin ethyl carbonate.

Erythromycin Glucoheptonate.—Erythromycin glucoheptonate is the glucoheptonate salt of erythromycin, an antibacterial substance produced by the growth of Streptomyces erythreus Waksman. The structural formula of erythromycin glucoheptonate has not been established.

Actions and Uses.—Erythromycin glucoheptonate has the same action and uses as the base except that it is primarily suited for intravenous injection. (See New and Nonoffiicial Remedies 1955, under the monograph on erythromycin.) Parenteral administration is indicated for erythromycin-susceptible infections in patients who are unconscious, who are vomiting, or who are unable for any other reason to take the drug orally. In such cases oral medication with the base or other salts should be resumed as soon as the patient can ingest and retain it.

Dosage.—For intravenous injection, an initial solution should be prepared by completely dissolving the equivalent of 0.25 gm. of erythromycin base in not less than 10 cc. of water for injection, U. S. P. This solution retains its potency for 7 days if kept in a refrigerator. *Saline or other diluent should not be employed for making the initial solution in order to avoid gel formation or slow and incomplete solution of the drug.*

For adults, the initial solution should be added to 250 to 500 cc. of isotonic sodium chloride solution or 5% dextrose solution and administered by slow intravenous infusion for 20 to 60 minutes. This dose (0.25 gm. equivalent to the base) may be repeated every 6 hours. A continuous slow infusion, administering the equivalent of 1 to 2 gm. of the base over a 24 hour period, may be employed as an alternate method.

For children, the initial solution is diluted as for adults but is administered in doses calculated on the basis of the equivalent of 5 mg. of the base per pound (about 11 mg. per kilogram) of body weight every 6 hours. Although the initial solution may be used for intravenous injection over a 5 minute period without severe reactions, this is not recommended because of nausea, vomiting, or pain along the vein; thrombosis has occurred in some instances.

Eli Lilly & Company cooperated by furnishing scientific data to aid in the evaluation of erythromycin glucoheptonate.

Erythromycin Lactobionate.—Erythromycin lactobionate is the lactobionate salt of erythromycin, an antibacterial substance produced by the growth of Streptomyces erythreus Waksman. The structural formula of erythromycin lactobionate has not been established.

Actions and Uses.—Erythromycin lactobionate, a water-soluble salt of erythromycin suitable for intravenous or intramuscular injection, has the same actions and uses as the base. (See New and Nonofficial Remedies 1955, under monograph on erythromycin.) Injection of the drug is indicated in patients unable to tolerate oral medication or in whom high blood levels are necessary to control severe erythromycin-susceptible infections resistant to other antibiotics. Oral therapy with erythromycin base or other salts should be resumed as soon as this becomes feasible. Erythromycin lactobionate, injected properly, has not been reported to produce thrombophlebitis following intravenous administration or tissue damage following intramuscular injection, but moderate to severe pain usually accompanies the latter.

Dosage.—Erythromycin lactobionate is administered either intravenously or intramuscularly, preferably by the former route to avoid pain produced by the latter route. Dosage is expressed in terms of erythromycin base. The usual dosage for children and adults is 1 to 2 mg. per pound (2.2 to 4.4 mg. per kilogram) of body weight either intravenously or intramuscularly, injected at intervals of 8 to 12 hours.

A 5% "stock" solution (equivalent to 50 mg. of erythromycin base per cubic centimeter) first should be prepared by completely dissolving the equivalent of 0.3 gm. of erythromycin base in 6 cc. (or the equivalent of 1 gm. of base in 20 cc.) of either water for injection or 5% dextrose solution. *Isotonic sodium chloride solution (normal saline) or other inorganic salt solutions should never be used as a solvent for preparing the 5% "stock" solution of erythromycin lactobionate because they cause precipitation of the active ingredient at that concentration.* In the dry form the salt is stable at ordinary temperatures for prolonged periods; the 5% solution is stable for 2 weeks when stored in a refrigerator.

For intravenous injection, the 5% solution should be diluted with not less than four volumes of either 5% dextrose or isotonic sodium chloride solution to make a final concentration of not more than 1% (equivalent to 10 mg. of erythromycin base per cubic centimeter). The calculated dose should be injected slowly over a period of not less than 5 minutes to avoid pain along the course of the vein; alternatively, the calculated intravenous dose may be administered by infusion by diluting this in 200 to 500 cc. of 5% dextrose or isotonic sodium chloride solution.

For intramuscular injection, the 5% "stock" solution is used undiluted. The calculated dose should be injected deeply into a large muscle with extreme care to avoid subcutaneous deposition. The pain following intramuscular injection is caused by transitory local irritation. A single intramuscular dose should not exceed 0.5 gm., as a precaution against the production of tissue damage.

Abbott Laboratories cooperated by f [illegible] fic dat the evaluation of erythrom [illegible] ion

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EMPHYSEMA AND ITS RELATIONSHIP TO DUST EXPOSURE

GUEST EDITORIAL

Oscar A. Sander, M.D.

Two recent papers by Heppleston [1] of Cardiff serve to emphasize that there still are many gaps in our basic pathological and physiological concepts of emphysema in general and of the focal emphysema of coal workers' pneumonoconiosis in particular. His meticulous microscopic serial sections of the lungs of coal miners seem to suggest that the focal emphysema that he finds in most of these lungs with simple pneumonoconiosis differs materially from generalized vesicular emphysema and is due primarily to dilation of the respiratory bronchioles around which coal dust deposits are found. His histopathological studies suggest that these coal dust deposits cause atrophy of the smooth muscle of the bronchiolar walls, permitting excessive dilatation of those bronchioles, which in turn increases the dead air space. When this becomes advanced, he believes, interference with exchange of gases and dyspnea on exertion may result, even though the airways are open and no bronchial obstruction exists.

This concept is in sharp contrast with that on which most present-day therapy is based; namely, that disabling emphysema, regardless of its cause, is primarily obstructive due at least in part to bronchospasm and that it can be improved symptomatically by bronchodilator aerosol inhalations and promotion of drainage of bronchial secretions. Motley,[2] Smart,[3] and Fowler [4] have shown good ventilatory improvement with the use of both bronchodilation and intermittent positive pressure breathing. Fowler, however, found that bronchodilation alone gave as good results with his nonminer patients with obstruction as when intermittent positive pressure breathing also was used, suggesting that obstruction due to bronchospasm is the main cause of disturbed function in emphysema that is unrelated to dust exposure. Disabling emphysema associated with dust exposure also had been thought to be due primarily to airway obstruction until the new concept was suggested by the pathological studies of South Wales coal miners' lungs.

As a matter of fact, the functional significance of dilated bronchioles with apparently normal alveoli, such as Heppleston describes, needs further investigation by careful physiological studies. Can focal emphysema alone without airway obstruction cause significant impairment of lung function? Several clews suggest that this may be unlikely. Fletcher [5] and Hugh-Jones [6] have stated repeatedly that coal workers with simple pneumonoconiosis (coal deposits plus focal emphysema) have relatively little disability and that most of the severe disability is found in miners with massive fibrosis. Another clew is furnished in a recent paper by Wells,[7] which indicated that simple coal workers' pneumonoconiosis was not a major contributing factor in the 28 deaths due to failure of the right side of the heart out of 181 autopsies on miners with simple pneumonoconiosis. On the other hand, almost half of 136 with massive fibrosis died of cor pulmonale. In the present state of our knowledge, it seems likely that focal emphysema per se is not a serious cause of impaired lung function. When an apparently real respiratory disability is found in a coal miner showing only simple pneumonoconiosis by chest roentgenogram, it appears that other causes for the dyspnea should be investigated, including heart disease and diffuse obstructive emphysema due to other causes, as well as the aging factor. Fletcher clearly states, "We do occasionally find men with simple pneumonoconiosis who are seriously disabled, but in such cases it is difficult to exclude the possibility that emphysema not of industrial origin is contributing to the disability."

These observations on focal emphysema by the pathologists of the British Pneumonoconiosis Research Unit need confirmation by similar third dimensional microscopic tissue studies, not only for other dust diseases but for emphysema in general. Gough [8] states that he has seen identical changes in the lungs of some hematite miners, foundry workers, and Kolar gold miners where the silica content of the dust is low. He believes that atrophy of bronchiolar smooth muscle may result from excessive deposits of other dusts, including some that we now consider inert, and that this is not a specific property of coal dust. This concept is difficult to comprehend because of the many cases of siderosis of welders, burners, and grinders in which there is neither evidence of emphysema nor disturbed ventilatory function and in which the microscopic sections show no evidence of focal emphysema. We know at least that that form of iron oxide causes no dilation of bronchioles. Why is it then that certain other dusts seem to have that effect?

The whole subject of pulmonary emphysema, whether or not related to the dust diseases, needs further definitive study, and the third dimensional technique seems ideal for the pathological evaluation. Present concepts have been based on a few microscopic sections from many cases, whereas many serial sections from a single case (up to 300 or 400 from a single 2 cc. block) should give far more reliable information. More meticulous lung tissue studies as well as lung function studies, correlated with histopathology, are necessary for a better understanding of the various types of emphysema and their physiological differences. Also lacking are reliable incidence figures on disabling obstructive emphysema in the population at various age levels. Until this information is available, therapy of emphysema will stay more or less empirical and our understanding of emphysema and its relationship to dust exposure more or less clouded.

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[2] Motley, H. L.: Clinical Pulmonary Physiology: Evaluation of Function Impairment and New Developments in Therapy of Chronic Pulmonary Disease, A. M. A. Arch. Indust. Hyg. **5**: 554-565 (June) 1952.

[3] Smart, R. H.; Davenport, C. K., and Pearson, G. W.: Intermittent Positive Pressure Breathing in Emphysema of Chronic Lung Diseases, J. A. M. A. **150**: 1385-1390 (Dec. 6) 1952.

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[5] Fletcher, C.: Coal Workers' Pneumoconiosis in South Wales, Saranac Symposium, September, 1952.

[6] Hugh-Jones, P.: Pulmonary Function Studies of Coal Miners in Wales, Symposium on Coal Miners' Pneumoconiosis, Elkins, W. Va., November, 1952.

[7] Wells, A. L.: Cor Pulmonale in Coal-Worker's Pneumoconiosis, Brit. Heart J. **16**: 74-78 (Jan.) 1954.

[8] Gough, J.: Personal communication to the author.

MORE AND BETTER TEACHERS NEEDED

According to Waterman [1] the number of persons being graduated in this country with a bachelor's or advanced degree in science is decreasing alarmingly. Such graduates are a constant and vital need in carrying on the research, development, and teaching needed to keep this country abreast of the rest of the civilized world. Much of our technological development stems from basic research carried on in a foreign country. Many of our most capable scientists were born in foreign countries and had their early training there. We cannot go on indefinitely relying on foreign sources. There is a special urgency to see that those who do study science are well taught and that there are enough well-qualified teachers to teach them.[2] At present only about 50% of those whose intelligence tests indicate that they would benefit by collegiate training go to college, and less than 2% obtain a Ph.D. degree. If we are to build up one of our most valuable resources, a body of intelligent well-trained scientists, we must increase the broad base of educated population from which most of our leaders in this field must come. To this end more scholarships for promising young scientists and potential teachers are needed. Many industries are now supporting such scholarships.

Recognizing the importance of directing promising young scholars into teaching, Professor Oates of Princeton in 1945 inaugurated a special type of fellowship to which the name Woodrow Wilson program has been given. This program, now operated by the Association of American Universities, selects candidates from a large number of nominees. The student cannot apply for a fellowship but must be nominated by his teacher as showing potential teaching ability. Those who are already definitely headed toward teaching careers are not nominated, but rather those whose futures are undecided. Successful candidates receive one year of graduate work at a school of their own choosing in the United States or Canada. They are placed under no obligation to enter the teaching profession but are merely asked to consider it seriously. About 80% of those selected to date are now in teaching or research positions. One fruitful by-product of the program is that many of the candidates who were not selected have gone into teaching. Thus the psychological effect of confidence in their teaching ability expressed at a critical stage in their development may have been more important than the a [illegible] Another [illegible]d feature of the program is that it increases the awareness of teachers of their role as talent scouts by giving them a part in recruiting persons to swell the ranks.

Finding good potential teachers early and then giving them adequate opportunities and backing is, alone, inadequate. The student's enthusiasm as a potential teacher must be preserved through constant stimulation. One of the best ways of accomplishing this is to allow the teacher to conduct some research. This not only contributes to the sum of human knowledge but also develops the teacher professionally and as a person. To this end the Social Science Research Council has established a faculty research fellowship program; its beneficiaries are freed from half of their teaching duties for three years. Senior professors and academic administrators nominate junior colleagues for these fellowships, which unlike most research grants permit the successful candidate to work in a field of his own choosing. Nothing inspires a developing scientist so much as association with the leaders in his field, as is indicated by the fact that among Nobel prize winners there are many pupils of former winners. We cannot manufacturer teachers and scientists, but we can do much to create an environment of opportunity and encouragement for those who show talent. Much of what has been said of teaching and research in general can find apt application in the field of medical teaching and research.

A LIGHTER TAX BURDEN FOR THE YOUNG

On July 18 the House of Representatives by a vote of 372 to 31 sent to the Senate H. R. 7225 amending the Social Security Act. The Senate did not act on this bill prior to adjournment on August 2. If enacted, the bill would, among other changes, force a number of self-employed groups now excluded—lawyers, dentists, osteopaths, veterinarians, chiropractors, neuropaths, and optometrists, but not physicians—under Old-Age and Survivors Insurance. Probably 30,000 physicians will attain age 72 during the next 15 years. Age 72 is mentioned instead of age 65, the minimum age at which O. A. S. I. pensions are now payable, because the pensions will be payable at age 72 regardless of earnings; and these pensions will entice few physicians when reaching age 65 to promptly quit taking care of the sick. Since these 30,000 physicians would pay on the average less than $1,000 in taxes during the next 15 years and they (and those now over age 72) would become eligible for pension benefits worth about $14,000, it follows that their exclusion from compulsory coverage will save the taxpayers of the future an average of at least $13,000 per physician, or about 400 million dollars. So the decision of the Ways and Means Committee and the House of Representatives to continue to exclude physicians from O. A. S. I. is a boon to the taxpayers of the future. If the Republicans and Democrats during the next 15 years continue to vie with each other in further increasing the windfalls for older workers under O. A. S. I., the boon to the next generation from the continued exclusion of physicians may be much greater than 400 million dollars.

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[1] Waterman, A. T.: The Science of Producing Good Scien
York Times Mag., July 31, 1955, p. 9.

[2] Wanted: Teachers and Scholars, C
Quart. Rep. 3: 1-3 (July) 1955.

THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

I would like to take a few moments of your time this month to tell you of some of the things that to my mind are very important. For many years the physician was little interested in politics per se. Occasionally a physician ran for public office, usually with little or no support from his confreres, the majority of his fellow practitioners being satisfied to practice medicine. While they aided the injured and the ill, they were at times even more important as family counselors. In many instances in this respect they were more helpful than the minister, priest, or rabbi, because as doctors their work cut across all sections of the life of a person, a family, and even, at times, the community. For years on end this was the pattern of the physician's life. Then something happened. Suddenly the physician was faced with an extremely serious situation. Where before he had been a completely independent individual, he suddenly found his independence challenged. For the first time in his life he became cognizant of the fact that he could not continue being just a physician but that he had to play a dual role, that of physician and also private citizen. It is concerning the latter aspect that I would like to express my views. In the first place we, as physicians, are citizens of this great country, and along with other citizens we have allowed our affairs to drift into the hands of a minority, evident in both political parties, interested solely in personal power and the necessary votes to continue in their very influential positions. Businessmen and manufacturers also began to realize that certain elements in their own groups were taking personal advantage of political preference and that a certain percentage of businesses were being infiltrated by men of doubtful character. Without publicity even our government likewise became insidiously infiltrated by a group of so-called liberal intellectuals, who, following the Fabian philosophy, began to teach and preach socialism. They would destroy our two-party form of government by making of the free and independent American citizen governed by law a group of subservient citizens governed by men, the citizen a chattel of government. During the past 20 years there has been a real threat that government of the people, by the people, and for the people would disappear from the American scene. By gradual change our lives and our freedoms became more and more uncertain, and, when finally the Fabians in our Congress began actively to press for socialized medicine, the physician suddenly realized that even he who had never been interested actively in governmental gyrations had a job to do if he was to preserve not only his own freedom but that of his neighbors. Even then, however, the physician did not realize fully how important was his franchise. Some of our medical leaders who were constantly in touch with the Washington scene began to write and to talk about the inherent dangers, but it was difficult to rouse the men at the grass roots level to take any action. Most of us were too busy taking care of the sick to be bothered. Some of us who did realize, however, the threat to our personal freedoms and the free enterprise that had made our country really great began to analyze at the local levels our own particular and peculiar problems. We found an amazing situation. First, only about 20% of our physicians and their wives and children of voting age were registered. That meant that those who had been elected to public office paid little, if any, attention to the demands of physicians when it came to legislative matters. This was the natural reaction of our legislators to the indifference of the medical profession. The first thing that several men, to whom we appealed for support, said was that we were not interested enough to vote, so why should we expect favorable cooperation when a much larger segment of the population desired the legislation in question and this group voted. About this time the bills that would socialize medicine were being advocated by some very vocal people, including a professional group called the Physicians Forum and many so-called liberal senators at Washington. One man in particular really challenged the medical profession of his own state on this subject, and, although this man was a Democrat, his Democratic medical constituents decided to do something about it. The physicians as citizens, their wives and friends raised money, saw to it that they were all registered and that their friends were registered, and then in organized groups all over that state pushed doorbells. The result was the overwhelming defeat of a very popular senator. Stimulated by the example of physicians of that state, physicians and their wives and friends in other states did likewise, and many a national and state legislator, elected or defeated, learned to appreciate the effect of a concerted effort of the American physicians.

Today, however, the physician seems to be resting on his oars. The immediate threat of medical socialization at one fell swoop seems to him to be impossible, but he does not realize that socialization of medicine may occur so gradually that we may not notice it. This is the reason for our close scrutiny of all bills that deal with or pertain to health matters at both the state and national levels. It is more imperative than ever for the physicians of this country to take an active interest in all bills concerned in any way with the health problems of the country and, more important, as citizens, to appraise all bills of all kinds so that they may support those that they believe are for the best interest of the public as a whole and oppose those that are not. We can no longer sit by complacently because at the moment everyone is more or less prosperous; we must be continually alert to all of our problems.

All physicians should take a more active interest in all civic affairs. We should be locally active in all movements that will make local living more enjoyable. We must be active in our chambers of commerce, our Red Cross programs, our many other programs for civic betterment sponsored by our local organizations. But most important is that we all be registered t vote and that we do vote. The argument that a single vote is no important is utterly false. Every vote is important.

Every physician in America should see to it that he is registered in the party of his choice, that his wife and children of voting age are registered, and that the people to whom he ministers are registered and that they all vote. The county society should organize its members for the same purpose. They should see that each member is registered in the party of his choice and should attempt to get him to vote. Even the woman's auxiliary should be encouraged to have its membership registered, and their voting should be urged on all issues. County societies should know the legislative issues and the voting record of every man of both parties on all of them—not only those concerning health but all issues. This is a citizen's obligation. Just as I have said so often: The A. M. A. is you as in a greater and broader sense the government is you. We get the kind of government and laws that we deserve, and, unless we are all out working 24 hours a day not only as physicians but as American citizens, we do not deserve very much.

Elmer Hess, M.D., Erie, Pa.

ORGANIZATION SECTION

COUNCIL ON MEDICAL SERVICE

Following are abstracts of actions by the Council on Medical Service as a result of meetings during the Annual Meeting in Atlantic City, N. J., June, 1955.

ELECTION OF CHAIRMAN

J. D. McCarthy, M.D., of Omaha was unanimously elected to serve as Chairman of the Council.

PROFESSIONAL LIABILITY INSURANCE

The Council voted to send to the Board of Trustees a report on professional liability insurance.

NEWSLETTER

The Council requested the staff to prepare a prospectus for a regular medical service newsletter for review by the Council at its next session. In discussing the subject of health councils, it was also suggested that the staff prepare a prospectus of a suitable type of newsletter for health councils.

COMMITTEE APPOINTMENT

David Henry Poer, M.D., Atlanta, Ga., was appointed to serve as a member of the Committee on Medical and Related Facilities.

GENERAL PRACTICE COMMITTEE

The Council submitted to the Board of Trustees the name of Arthur C. Scott Jr., M.D., as its representative to serve on a special committee on general practice.

SURVEY ON AVAILABILITY OF CIVILIAN PHYSICIANS

In response to a request from the Board of Trustees the Council submitted recommendations regarding a survey to determine the availability of civilian physicians to provide certain medical services currently provided in military facilities. After approval by the Board, it was voted to make pilot surveys in cooperation with the Council on National Defense and with the assistance of the local medical societies involved.

PROGRESS REPORT ON MEDICAL SCHOOL STUDY

The Council voted to submit to the House of Delegates a progress report on the medical school study having to do with programs for supplementing through private practice the incomes of full-time teachers in medical schools. In connection with this study the Council approved the mailing of a questionnaire to state and local medical societies to learn something of the attitude of the local profession toward the operating policies of medical schools.

HOUSE OF DELEGATES' RESOLUTIONS

Reports and recommendations regarding the following resolutions were approved for transmittal to the Board of Trustees: (1) Resolution (No. 11—1954 Clinical Session) on Better Liaison with Health and Accident Insurance Carriers; (2) Resolution (No. 1—1954 Clinical Session) on Agreements between Prepayment Plans and Organized Medicine; and (3) Resolution (No. 12—1954 Clinical Session) on Relationships Between Component County Societies and Lay Sponsored Health and Welfare Plans.

PUBLICATION ON COMPULSORY SICKNESS INSURANCE

The Council approved the preparation of a booklet on compulsory sickness insurance in cooperation with the Department of Public Relations. It was recommended that the booklet be directed to physicians and the public.

MANAGEMENT AND UNION HEALTH CENTERS

The Council on Medical Service and the executive committee of the Council on Industrial Health voted to submit to the House of Delegates the "Guiding Principles for Evaluating Management and Union Health Centers," originally prepared by the Committee on Medical Care for Industrial Workers. It was further voted that the members of the House be requested to review the principles prior to the 1955 Clinical Session.

CONFERENCE IN BITUMINOUS COAL MINING AREA

The Council authorized the Committee on Medical Care for Industrial Workers to hold its fourth conference on medical care in the bituminous coal mine area.

PHYSICIANS ATTITUDES QUESTIONNAIRE

The Council authorized the Committee on Prepayment Medical and Hospital Service to meet with a committee of the Blue Shield Commission for a discussion of the responses to the Physicians Attitudes Questionnaire. The Committee was also authorized to publish data on this survey.

SIMPLIFIED CLAIM FORMS

The Council voted approval of the following simplified claim forms submitted by the Health Insurance Council with the understanding that on first reprint the forms be modified as suggested by the Committee on Prepayment Medical and Hospital Service: IPHS-1, ID-1, IDS-1, GD-1, and GDS-1. These forms are for individual hospital or surgical accident or sickness insurance and for various types of group insurance.

PHYSICIANS PLACEMENT SERVICE

The Council staff was authorized to make a concerted effort to learn of available openings for specialists in view of the volume of requests being received from such physicians.

LISTING OF COUNCIL PUBLICATIONS

A listing of various Council publications in indexes and bulletins used as reference sources by libraries and schools was authorized.

HILL-BURTON AMENDMENTS

The Council instructed the Committee on Medical and Related Facilities to collect facts and data regarding the Hill-Burton Act with particular emphasis on the section of the new regulations dealing with diagnostic and treatment centers.

VOLUNTARY HEALTH INSURANCE

At the request of the Board of Trustees the Council considered a proposed resolution on voluntary health insurance and recommended that it be referred to the Commission on Medical Care Plans.

FEDERAL MEDICAL LEGISLATION

First Session, 84th Congress

Federal Aid for Public Health Education

Senator Humphrey (D., Minn.), in S. 1859, proposes to provide a five year emergency grant and scholarship program for postgraduate study in schools of public health. Over a five year period he would authorize 5 million dollars for outright subsidies, 5 million dollars for construction grants on a 50-50 matching basis, and a total of 250 million dollars for scholarships. He would provide grants on a basis of 15% of the basic operating costs of graduate instruction plus "an additional sum of $500 for each full-time student regularly enrolled for the fiscal year for graduate work in public health in excess of thirty such students; and an additional sum of $500 for each full-time student regularly enrolled for the fiscal year for graduate work in public health in excess of its average past enrollment of such students." The maximum per school would be 50% of the basic operating cost of the school. This measure would be administered by the surgeon general of the Public Health Service. The bill was referred to the Committee on Labor and Public Welfare.

Distribution and Use of Serum

Congressman Priest (D., Tenn.), in H. R. 6207, would authorize the Secretary of Health, Education, and Welfare to supervise and control the distribution and use of any virus,

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From the Washington Office of the American Medical Association.

serum, toxin, antitoxin, and analogous products when the Secretary deems such action necessary to protect and preserve the health of the American people. The present authority prohibits the sale or distribution of such products unless the manufacturer has been licensed and the packages are labeled properly. This bill was referred to the Committee on Interstate and Foreign Commerce.

Cash Disability Insurance Under Social Security

Senator Potter (R., Mich.) proposes, in S. 2094, "to amend Title II of the Social Security Act so as to reduce from 65 to 60 years the age at which wives and widows may qualify for old age and survivors insurance benefits and to provide for the payment of disability insurance benefits," after a six months' waiting period with payments reduced by workmen's compensation benefits, if any. The amount of benefits would be figured on the same formula as old age benefits but would be subject to reduction if the disabled person refuses rehabilitation evaluation and training or fails to submit himself for examination. This bill was referred to the Finance Committee.

Chiropractors in the VA

Congresswoman Rogers (R., Mass.) by request has introduced, in H. R. 6311, a measure that would "authorize the appointment of doctors of chiropractic in the Department of Medicine and Surgery of the Veterans' Administration." Such doctors of chiropractic must "hold a degree of doctor of chiropractic from a school or college approved by the Administrator, be licensed to practice chiropractic in one of the states or territories of the United States or in the District of Columbia, and have practiced chiropractic for a period of at least two years." This bill was referred to the Committee on Veterans' Affairs.

Agency for the Handicapped

Senator Neely (D., W. Va.), in S. 1951; Congressman O'Hara (D., Ill.), in H. R. 6065; Congressman Doyle (D., Calif.), in H. R. 6718; and Congresswoman Kee (D., W. Va.), in H. R. 6960, have introduced identical bills in a series of identical bills to establish an agency for the handicapped to be placed in the Department of Labor. The present functions of the Office of Vocational Rehabilitation would be transferred from the Department of Health, Education, and Welfare to the new agency. Provision is made for: (*a*) payment, through the states, of a $60 per month pension to all handicapped persons whose rehabilitation is unfeasible, (*b*) a revolving loan fund to assist in the financing of state programs, and (*c*) establishment of a new division for the handicapped within the Civil Service Commission and the United States Employment Service. The previous bills are as follows: H. R. 5465 by Bennett (D., Fla.), H. R. 5471 by Dingell (D., Mich.), H. R. 5487 by Withrow (R., Wis.), H. R. 5510 by Knutson (D., Minn.), H. R. 5513 by McCormack (D., Mass.), H. R. 5523 by Tollefson (R., Wash.), H. R. 5571 by Rhodes (D., Pa.), H. R. 5603 by Kelley (D., Pa.), H. R. 5705 by Buchanan (D., Pa.), H. R. 5737 by Chudoff (D., Pa.), H. R. 5859 by Saylor (R., Pa.), H. R. 5874 by Bailey (D., W. Va.), H. R. 5939 by Buckley (D., N. Y.), H. R. 5971 by Rabaut (D., Mich.), and H. R. 6064 by Madden (D., Ind.). The Senate bill was referred to the Committee on Labor and Public Welfare. The House bills were referred to the Committee on Education and Labor.

Male Nurses as Reserve Officers

Senator Saltonstall, in S. 2050, and Congresswoman Bolton, in H. R. 2559, have introduced the Defense Department measure to authorize the commissioning of men as reserve officers in the Military Nurse Corps under the same provisions of law as are applicable to women. These bills were referred to the respective armed services committees.

Federal Aid to Medical Education

Congressman Elliott (D., Ala.) has introduced an identical measure with S. 1323 and H. R. 4743, previously reported. This bill would authorize 250 million dollars over a period of five years in grants for construction of medical education and research facilities for our accredited public and private medical schools. The bill was referred to the Interstate and Foreign Commerce Committee.

Loans for College Students

Congressman Poage (D., Texas), in H. R. 6304, would authorize the Secretary of the Department of Health, Education, and Welfare to lend up to $1,500 per year to eligible college and university students "to assist them in pursuing courses of education (including postgraduate courses) at accredited colleges and universities in the United States." The course of study could include medicine. The rate of interest would be 3% from the date the borrower leaves school. The loan would be repayable in five annual installments, beginning on the fifth anniversary of the date of the loan after the borrower has left school. Overdue and extended balances would carry an 8% interest rate. This bill was referred to the Committee on Education and Labor.

Prohibition of Severance of Ten Year Service Connection

Congresswoman Rogers (R., Mass.), in H. R. 6312, proposes "to prohibit the severance of a service-connected disability 'connection' which has been in effect for ten or more years . . . unless on a showing that the original rating was based on fraud or gross misrepresentation." This bill was referred to the Committee on Veterans' Affairs.

Cancer Research

Congressman Chiperfield (R., Ill.), in H. R. 6473, would "authorize and request the President to undertake to mobilize at some convenient place in the United States an adequate number of the world's outstanding experts, and coordinate and utilize their services in a supreme endeavor to discover means of curing and preventing cancer." This bill was referred to the Committee on Foreign Affairs.

Air Pollution Control

Congressman Hiestand (R., Calif.), in H. R. 6597, and Congressman Roosevelt (D., Calif.), in H. R. 6699, have introduced identical measures with S. 928, which would provide research and technical assistance related to air pollution control. S. 928 was reported in THE JOURNAL, April 16, 1955, page 1413, and was passed by both Houses and signed by the President and is Public Law 159. The Committee on Interstate and Foreign Commerce handled this measure in the House. Senator Sparkman (D., Ala.), in S. 2126, in the extension of the housing and slum clearance provisions of the National Housing Act proposes to authorize 50 million dollars for air pollution control and prevention loans. The Secretary of Health, Education, and Welfare would be given funds for technical research studies concerned with air pollution and excessive smoke. This measure is similar to S. 1565, previously reported. The measure was referred to the Committee on Banking and Currency.

Active Tuberculosis Deemed Permanently and Totally Disabling

Congressman Dorn (D., S. C.), in H. R. 6685, proposes to amend the Veterans Regulations concerning disabilities or death not as a result of service to provide that "active tuberculosis shall be deemed permanently and totally disabling." This bill was referred to the Veterans Affairs Committee.

Presumption of Service Connection for Leprosy

Congresswoman Rogers (R., Mass.), in H. R. 6698, proposes to amend the Veterans Regulations to increase from one to three years the period after discharge during which leprosy if diagnosed would be considered service connected. This bill was referred to the Committee on Veterans Affairs.

Presumption of Service Connection for Tuberculosis

Congressman Moulder (D., Mo.) proposes, in H. R. 7579, to amend the Veterans Regulations to establish that "where any individual who has been rated as totally disabled for ten consecutive years or more from active tuberculosis of any type dies, the death of such individual shall be conclusively presumed to be the result of disease incurred or aggravated in line of duty in the active military or naval service." This measure was referred to the Committee on Veterans Affairs.

Family Allowances for Health and Well-Being of Children

Senators Neuberger (D., Ore.), Morse (D., Ore.), Douglas (D., Ill.), Humphrey (D., Minn.), Lehman (D., N. Y.), Kennedy

(D., Mass.), McNamara (D., Mich.) propose, in S. Res. 109, to create a special congressional committee to study the family allowance program in Canada to determine the advisability of instituting legislation for a similar program in the United States. This bill was referred to the Committee on Labor and Public Welfare.

Compulsory Social Security for Self-Employed

Congressman Johnson (D., Wis.) proposes, in H. R. 6811, "to extend coverage under the Federal old-age and survivors insurance system to self-employed physicians, lawyers, dentists, and veterinarians." This measure was referred to the Committee on Ways and Means.

Silicosis Research

Senator Welker (R., Idaho) proposes, in S. 2299, to establish a national industrial health institute in the National Institutes of Health to conduct broad research training in prevention, control, and cure of silicosis and other industrial diseases. The surgeon general of the Public Health Service would be authorized to make grants-in-aid to universities, hospitals, and individuals for research projects and traineeships. A national advisory industrial health council would be established. This measure was referred to the Committee on Labor and Public Welfare.

Chronic Alcoholism

Congressman Gubser (R., Calif.), in H. R. 6837, would authorize the Secretary of Health, Education, and Welfare to institute a program of research and treatment with respect to chronic alcoholics. The program would "include the establishment of an institute (or the expansion of an existing institute) . . . to conduct and support scientific research and professional training relating to the cause, prevention, and methods of diagnosis and treatment of chronic alcoholism; the establishment or expansion of a national advisory council . . . to advise, consult with, and make recommendations to the Surgeon General on matters relating to chronic alcoholism; and the establishment of traineeships and fellowships. . . . Such program shall also provide for assistance to and cooperation with states conducting research and treatment programs with respect to chronic alcoholism." This measure was referred to the Committee on Interstate and Foreign Commerce.

National Library of Medicine

Congressman Fisher (D., Texas), in H. R. 6915; Senator Smith (R., N. J.), in S. 2408; Senator McCarthy (R., Wis.), in S. 2482; Congresswoman Church (R., Ill.), in H. R. 7344; and Congressman Frelinghuysen (R., N. J.), in H. R. 7528, have introduced identical measures to establish a national library of medicine in keeping with the recommendations of the Hoover commission. The site for the national library of medicine would be in the District of Columbia, and to this library would be transferred "all property, records, personnel, and unexpended balances of appropriation, allocations, and other funds available or to be made available, of the Armed Forces Medical Library." The library would be a division of the Smithsonian Institution but would have its own board of trustees, which would be selected by the board of regents of the Smithsonian Institution. The Senate bills were referred to the Committee on Labor and Public Welfare. The House bills were referred to the Committee on House Administration.

Military Credit for Civilian Intern Training

Congressman Lane (D., Mass.) has proposed, in H. R. 4810, to give credit to active and retired officers of the medical departments of the Army and Air Forces for all service personnel as civilian interns in Army hospitals on the civilian employee basis in calculating promotion longevity pay. This measure was referred to the Committee on Armed Services.

MR. HOLLOWAY RETIRES

Mr. J. W. Holloway Jr., who served nearly 30 years with the American Medical Association, many of them as Director of the old Bureau of Legal Medicine, has retired and soon will move to Smithfield, Va., where he was born. He will, for the time being at least, retain his membership on the A. M. A. Committee on Medicolegal Problems.

TEXAS TO HOLD FIRST PUBLIC RELATIONS CONFERENCE

The Texas Medical Association is holding its first annual public relations conference early in September. This conference, tailored to fit the needs of public relations workers at the county level, is the first attempt by the state association to bring local chairmen together for a program especially planned for them. Executive Secretary C. Lincoln Williston has worked up a program that includes every phase of medical public relations, including external projects such as health forums, health fairs, and exhibits. Members of the Texas committee on public relations, headed by Dr. William M. Crawford, Fort Worth, will be hosts at the conference. A. M. A. Public Relations Director Leo Brown is scheduled to speak on "Public Relations and Its Application to Medicine." He also will take part in a panel discussion on "PR Programming for County Societies." John L. Bach, director of A. M. A. press relations, will speak on "Doctor-Press Relations at the County Society Level" and will take part in a panel discussion on the subject, which will include a review of work by grievance committees.

MEETING ON HEALTH OF COAL MINERS

To explore ways of improving liaison between medical societies and area medical administrators of the United Mine Workers Welfare and Retirement Fund, the American Medical Association will sponsor the fourth Conference on Medical Care in the Bituminous Coal Mine Area this fall. The conference will be held Oct. 2 in Charleston, W. Va., under the auspices of the Council on Industrial Health and the Council on Medical Service. Representatives of the liaison committee and officers of the UMW Welfare and Retirement Fund of the five states in the country's principal coal-mining areas have been invited to attend. A number of other states interested in these problems also will send representatives.

LEAFLET FOR YOUR PATIENTS

An attractive new leaflet earmarked for patients only will be distributed in September to members of the A. M. A. Entitled "To All My Patients," this 12-page pamphlet (for physicians to distribute to their patients) explains the roles of various persons on the medical team in providing good medical care. In addition, the booklet briefly discusses medical and hospital fees and health insurance. Designed primarily to promote better doctor-patient relationships, the booklet also provides space for the doctor's name, address, and office hours to be inserted at the end. Quantities will be available on request from the A. M. A. Public Relations Department.

STUDY OF GRIEVANCE COMMITTEE OPERATIONS

Standards for medical society grievance or mediation committees are being developed by a special committee appointed by the A. M. A.'s Board of Trustees. A group of consultants—state executive secretaries Rowland B. Kennedy, Mississippi; Harvey T. Sethman, Colorado; and John E. Farrell, Rhode Island—and several A. M. A. staff members are visiting some 25 state medical associations to collect information on grievance committee organization and operation. Those states not visited will receive a survey form that should be submitted to the committee if the society wishes its grievance committee program to be included in this study. In addition, a special survey form will be sent to about 70 county medical societies. Personal visits also will be made to selected societies having a variety of types of grievance committees.

COMMITTEE ON RESEARCH

Dr. Norman De Nosaquo, who served 16 years as a member of the division of medicine of the Food and Drug Administration in Washington, has taken over as Secretary of the A. M. A. Committee on Research, a job formerly held by Dr. Paul L. Wermer, who resigned to join an eastern pharmaceutical company. Dr. De Nosaquo was graduated from the University of Wisconsin Medical School in 1927.

MEDICAL NEWS

CALIFORNIA

Postgraduate Lectures.—A Lecture Series on Obstetrics, Gynecology, and Dermatology will be sponsored by the Riverside-San Bernardino chapter of the American Academy of General Practice cooperating with the school of medicine and medical extension on the Los Angeles campus of the University of California, with monthly meetings, Sept. 15-May 17. The first lecture in the series will be at 7 p. m., Sept. 15, when "Eclamptogenic Toxemia" will be presented by Dr. Nicholas S. Assali, Los Angeles, at the Mission Inn, Riverside. Lectures are scheduled for the third Thursday monthly at various locations. The fee for the series, $37.50, does not include the dinner preceding the lectures. Requests for information should be made to Dr. Thomas H. Sternberg, University of California Medical Center, Los Angeles 24 (Granite 89711, station 202), or to Dr. Walter A. Sullivan, 108 E. H St., Ontario (telephone 622-106).

FLORIDA

Appoint Department Head.—Frank W. Putnam, Ph.D., formerly a staff member of the Argonne Cancer Research Hospital in Chicago, has been named head of the department of physiological chemistry of the University of Florida College of Medicine, Gainesville. Dr. Putnam, who will assume his new position Sept. 1, has been affiliated with Duke University School of Medicine, Durham, N. C., Stritch School of Medicine of Loyola University, Chicago, the University of Chicago, and the University of Cambridge, England. He is editor of the *Archives of Biochemistry and Biophysics* and 1955 chairman of the AAAS Gordon Conference on Proteins and Nucleic Acids.

ILLINOIS

Discussions on the Cancer Quack.—The Illinois division of the American Cancer Society has scheduled six district meetings for the fall:

First District, Sept. 15, Messiah Lutheran Church, Sterling.
Second District, Oct. 20, Hotel Custer, Galesburg.
Third District, Sept. 8, First Methodist Church, Pekin.
Fourth District, Sept. 29, Masonic Temple, Jacksonville.
Fifth District, Oct. 6, Moose Club, Champaign.
Sixth District, Oct. 13, Herrin Elks Club, Herrin.

Mr. Oliver Field, Chicago, Director of the Bureau of Investigation, American Medical Association, the featured speaker at all the district meetings, will discuss the cancer quack.

Chicago

Volunteer Medical Company.—A meeting of the Volunteer Medical Company 9-20, U. S. Naval Reserve, will be held at the U. S. Veterans Research Hospital, Room A-302, 333 E. Huron St. (MOhawk 4-6600), at 8:15 p. m., Sept. 6. "Surgery of the Heart for Acquired Heart Disease" will be presented by Dr. Herbert D. Trace.

Professorial Promotions.—The following members of the Northwestern University Medical School faculty have been promoted to the rank of full professor effective Sept. 1: Dr. William J. Baker, Chicago, professor of urology; Dr. John M. Dorsey, Chicago, professor of surgery; Dr. Benjamin M. Kagan, Chicago, professor of pediatrics; George K. Yacorzynski, Ph.D., Evanston, professor of neurology and psychiatry; and Dr. Samuel J. Zakon, Chicago, professor of dermatology.

Personal.—Dr. Josiah J. Moore, a native of Montana, for many years Treasurer of the American Medical Association, has been elected to honorary membership in the Montana Medical Association.——Dr. Aldo A. Luisada has been named editor-in-chief of the forthcoming "Encyclopedia of Cardiology," a two volume encyclopedia, published by the American College of Cardiology, which will cover the clinical aspects of cardiology and data and problems of allied sciences.——Dr. Richard A. Perritt addressed the International College of Surgeons in Geneva, Switzerland, May 23, on "The Ridley Intra-Ocular Acrylic Lens Operation—Comments and Modifications."——Dr. Edwin L. Crosby, director of the American Hospital Association, Chicago, has been elected to the board of trustees of his alma mater, the Albany (N. Y.) Medical College of Union University. Dr. Crosby, first director of the Joint Commission on the Accreditation of Hospitals and former director of the Johns Hopkins Hospital in Baltimore, has been research director for the Hoover Commission Medical Task Force.——Dr. William F. T. Kellow, instructor in medicine at the University of Illinois College of Medicine, will assume his duties as assistant dean and assistant professor of medicine Sept. 1. He has been assistant chief of medicine at the west side Veterans Administration Hospital since September, 1953.——Presbyterian Hospital has appointed Dr. Theodore B. Schwartz as chief of the recently established endocrinology and metabolic diseases division of its department of medicine. The division will conduct investigations in endocrinologic and metabolic disorders under a grant from the John A. Hartford Foundation. Dr. Schwartz has been assistant chief of medicine since 1953 at the Veterans Administration Hospital, Durham, N. C.

IOWA

Institute on Agricultural Medicine.—A grant of $109,000 for support of the nation's first Institute of Agricultural Medicine has been awarded to the State University of Iowa, Iowa City, by the W. K. Kellogg Foundation. The institute will be set up to conduct medical and social research on the diseases to which farm people are especially susceptible and to develop new measures to safeguard the farmer's health. The new unit will be under the jurisdiction of Dr. Franklin H. Top, head of the department of hygiene and preventive medicine. In addition to studies on the 88 known diseases transmitted from animal to man, the institute will bring studies to bear on skin diseases due to contact with chemicals and plants; impurities in water, milk, milk products, and other foods; the effects of chemical fertilizers and insect sprays on the agricultural worker and the consumer; mental depression among rural workers; and farm accidents.

LOUISIANA

Graduate Medical Assembly.—The ninth annual meeting of the Southwest Louisiana Graduate Medical Assembly will be presented by the Calcasieu Parish Medical Society at the Majestic Hotel, Lake Charles, Sept. 16-17. Guest speakers include:

William F. Guerriero, Dallas, Texas, The Indefinite Pelvic Mass—Problem and Solution. Differential Diagnosis of Vaginal Bleeding.
Mervin H. Grossman, Dallas, Texas, Use and Abuse of Blood Transfusions. Now the Rh Baby Can Be Saved.
Bedford F. Boylston, Houston, Texas, Whiplash Injuries of the Cervical Spine. Treatment of Common Injuries of Upper Extremities.
Patrick H. Hanley, New Orleans, Presacral Inclusion Cysts. Common Lesions Seen in Proctoscopic Examination.
Charles L. Martin, Dallas, Texas, Treatment of Cancer of the Skin.
Samuel B. Nadler, New Orleans, Specific Correction of Surgical-Medical Electrolyte Imbalance. Present Concepts in the Laboratory Diagnosis of Liver Disease.
Walton R. Akenhead, New Orleans, subjects to be announced.

The program will include lectures, "curbstone" consultations, clinicopathological conferences, round-table luncheons, medical motion pictures, scientific exhibits, and technical exhibits. Registration fee, $10. For information write Mrs. Pat Seaman, Assistant Secretary, P. O. Box 568, Lake Charles, or phone HEmlock 6-9551, Ext. 201.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

MASSACHUSETTS

Appoint Associate Dean.—Dr. Lamar Soutter, Dedham, associate professor of surgery at the Boston University School of Medicine since 1952, has been appointed associate dean. During World War II Dr. Soutter served in the Army Medical Corps with the First and Third Armies. From 1946 to 1952, he was an instructor in surgery at his alma mater, the Harvard Medical School, Boston. He was chairman of the Massachusetts Medical Society's committee for the supervision of the Red Cross Blood Program from 1949 to 1952 and was president of the New England Association of Blood Bank Directors, 1950 to 1952.

MISSOURI

University News.—The Saint Louis University School of Medicine announces the appointment of the following St. Louis physicians: Andrew L. Hahn, instructor in internal medicine; Frank J. Valach, assistant in gynecology and obstetrics; Robert Rochman, assistant in neurology and psychiatry; James W. Nofles, assistant in ophthalmology; and, as assistants in internal medicine, St. Louis physicians Murray Chinsky, Henry T. Cooper, Sidney Goldenberg, and Dr. Albert M. Huggins of Overland.

Dr. Doisy Honored.—St. Louis University has honored its Nobel-prize-winning biochemist, Edward A. Doisy, Ph.D., by naming the department of biochemistry for him. The announcement was made at a dinner celebrating the 25th anniversary of the assignment of patent and licensor rights to the university by Dr. Doisy for the manufacture and sale of Theelin, the ovarian hormone isolated by him and his associates in 1929. A plaque placed at the entrance to the department reads, "In recognition of discoveries which have revealed the truth of nature's secrets and advanced man's well-being, St. Louis University, paying tribute to the genius and generosity of a servant of truth and a guardian of welfare, hereby names and dedicates this department the Edward A. Doisy Department of Biochemistry. On the twenty-fifth anniversary of the assignment of patent and licensor rights to the University by Dr. Doisy, February, 1955."

NEBRASKA

Rehabilitation Institute.—Creighton University School of Medicine, Omaha, the State League for Nursing, and the Nebraska Arthritis and Rheumatism Foundation will sponsor an Institute on Rehabilitation of Neuromuscular and Rheumatic Diseases at Creighton Memorial St. Joseph's Hospital Sept. 8-10. Guest speakers will be Dr. Joseph G. Benton, New York; Dr. William A. Spencer, Houston, Texas; and Dr. William D. Robinson, Ann Arbor, Mich. For information write Dr. Harold N. Neu, Medical Director, Department of Rehabilitation, Creighton Memorial St. Joseph's Hospital, Omaha.

NEW YORK

Bequests for Student Medical Care.—A bequest of more than $400,000 from the late Dr. Clarence P. Oberndorf, who left the residue of his estate to his alma mater, Cornell University, "for the psychiatric treatment of students in the university," will in part provide funds to operate the mental health division of the Cornell student medical service. The bequest is the second major gift to the Cornell health service this year. In February a grant of $450,000 was made by the Gannett Foundation for a campus medical clinic in honor of Frank E. Gannett of Rochester, president of the Gannett Newspapers and a Cornell graduate and trustee.

Course in Tuberculosis of Childhood.—The department of pediatrics of New York University College of Medicine will present a course in tuberculosis for pediatricians and general practitioners at the chest clinic of the Children's Medical Service of Bellevue Hospital Sept. 26-30. This course, designed for pediatricians or general practitioners interested in tuberculosis in infants and children, will be comprised of lectures, clinical demonstrations, and discussions of the diagnosis, prognosis, and treatment of tuberculosis and other pulmonary disorders. The tuition is $60. Those interested should apply to Dr. Edith M. Lincoln, Bellevue Hospital, New York 16.

New York City

Occupational Medicine Course.—Lectures on occupational medicine will be given 9-10 a. m. on Saturdays beginning Sept. 17, in Amphitheater A, Columbia University College of Physicians and Surgeons, 630 W. 168th St., by members of the staff of the division of occupational medicine of the school of public health. Members of the medical and allied professions are invited. There will be no formal registration and no tuition fee. The schedule is as follows:

Sept. 17, History, Scope, Objectives, and Practice of Occupational Medicine.
Sept. 24, Industrial Toxicology—General Principles.
Oct. 1, Toxic Metals 1.
Oct. 8, Toxic Metals 2.
Oct. 15, Toxic Solvents 1.
Oct. 22, Toxic Solvents 2.
Oct. 29, Toxic Dusts.
Nov. 5, Toxic Gases.
Nov. 12, Ventilation, Lighting, Noise.
Nov. 19, Elementary Nuclear Physics; Radiation Hazards.
Nov. 26, written examination (optional for visitors).

Personal.—Dr. George T. Pack will deliver the salutation address at the opening of the Woman's Medical College in Philadelphia Sept. 9.——Dr. Maxwell H. Poppel, chairman, department of radiology, New York University College of Medicine, has been appointed consultant in radiology to the U. S. Naval Hospital at Bethesda, Md.——Dr. R. Frederick Shepard was recently appointed medical director of the Rehabilitation Center of Hawaii in Honolulu.——Dr. Edward W. Lowman, clinical director, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, recently left to be guest of the dean of University of Chile medical school, Santiago. He was invited to act as consultant to the medical school in planning the establishment of a department of physical medicine and rehabilitation.——Dr. Gregory Zilboorg, clinical professor of psychiatry, State University of New York College of Medicine at New York City in Brooklyn, has been elected vice-president of the International Congress of Criminology to be held in London, England, Sept. 11-18.——Dr. T. Campbell Thompson has been appointed surgeon-in-chief of the Hospital for Special Surgery and professor of clinical surgery (orthopedics) of Cornell University Medical College, succeeding Dr. Philip D. Wilson, who retired July 1 from the position of surgeon-in-chief to become the hospital's director of research and education.

OHIO

Personal.—Dr. Robert H. Bishop Jr., Cleveland, has been awarded the American Social Hygiene Association's William Freeman Snow medal. Since 1947, Dr. Bishop has been director of the Joint Committee for the Advancement of Medical Education and Research of the Western Reserve University School of Medicine and affiliated hospitals.

Anesthesiologists Meet in Toledo.—The Ohio Society of Anesthesiologists will present their annual scientific program at the Commodore Perry Hotel, Toledo, Sept. 10. Presentations by out-of-state speakers will include "Blood Loss During Surgery in Infants and Children" by Dr. Robert M. Smith, Boston, and "Present State of Hypothermia" by Dr. Alexander B. Stearns, Detroit. Dr. Smith will participate in the concluding panel discussion, "Problems in Pediatric Anesthesia," for which Dr. Nicholas G. DePiero, Cleveland, will serve as moderator.

OKLAHOMA

Society News.—Dr. Dixon N. Burns has been named president of the newly organized Tulsa Obstetrical and Gynecological Society; Dr. Walter B. Sanger, president-elect; Dr. W. Carl Lindstrom, vice-president; Dr. Jed E. Goldberg, secretary-treasurer; and Dr. William F. Thomas Jr., member of the executive committee. Beginning in September the society will hold monthly meetings featuring distinguished guest speakers.

Full-Time Pediatrics Department Head.—Dr. Henry B. Strenge, who has been affiliated with the University of Oklahoma since 1947, became the first full-time head of its department of pediatrics on July 1. In line with the school's policy of having full-time men to head the major clinical departments, he succeeds Dr. Clark H. Hall, a practicing pediatrician, who will continue as professor of pediatrics. A graduate of Yale University School of Medicine, Dr. Strenge interned at New Haven (Conn.) Hospital and completed his residency work in pediatrics at Strong Memorial-Rochester Municipal Hospitals, Rochester, N. Y.

SOUTH CAROLINA

Surgical-Medical Meeting.—The combined meeting of the South Carolina chapter of the American College of Surgeons and the annual medical meeting of the staff of the Self Memorial Hospital, Greenwood, will be held Aug. 27 in Greenwood. The following program has been planned:

Management of the Dehydrated Child, Nelson K. Ordway, New Orleans.
Immediate Management of the Accident Victim, Moore Moore Jr., Memphis, Tenn.
Diagnosis and Treatment of Hematological Malignancies, R. Wayne Rundles, Durham, N. C.
Surgical Treatment of Carcinoma of the Cervix, William W. Daniel, New York.
Spontaneous Rupture of the Esophagus, George H. Bunch, Columbia.
Palliative Procedures in Advanced Breast Cancer, Joseph H. Farrow, New York.
Head Injuries, Edgar F. Fincher, Emory University, Ga.
The Ulcer Problem, Philip Thorek, Chicago.

TEXAS

Annual Clinical Conference.—The ninth annual North Texas-Southern Oklahoma Fall Clinical Conference will convene at the Wichita Falls Country Club Sept. 17. Dr. Roger W. Manar, Wichita Falls, president, Wichita County Medical Society, will deliver the address of welcome at 9:15 a. m., after which "Diagnosis and Treatment of Eruptions of Hands and Feet" will be presented by Dr. Clarence S. Livingood, Detroit; "Prolonged Labor" by Dr. John H. Randall, Iowa City; and "Diagnosis and Treatment of Varicose Veins" by Dr. I. Mims Gage, New Orleans. The round-table luncheon will be preceded by Dr. Livingood's paper, "Use of Cortisone, Hydrocortisone and ACTH in Skin Eruptions." The afternoon session will open at 2:30 p. m. with "Headache" by Dr. W. Grady Reddick, Dallas, after which Dr. Randall will discuss "Office Gynecology" and Dr. Gage, "Treatment of Benign and Malignant Pigmented Moles." A cocktail hour, 6:30 p. m., will precede the informal dinner dance. Registration fee, $8, covers scientific sessions, a round-table luncheon, cocktail party, and dinner dance. There will be an additional charge of $4 for bringing a guest to the dance.

WEST VIRGINIA

State Health Conference.—The 31st annual meeting of the State Health Conference will be held at the Daniel Boone Hotel, Charleston, Sept. 7-9. The main topic for discussion will be "Current Problems in Maternal and Child Health" and the main conference theme, "What Is Happening in Public Health in West Virginia?" The fourth annual Health Education Workshop, meeting conjointly with the State Health Conference, will have as its theme "Current Developments in Health Education in West Virginia." Subjects to be discussed include "Current Status of Public Health in West Virginia" and "Local Responsibility for Providing Local Health Services." The conference program will include presentation of "Current Status of Public Health in West Virginia," Dr. Newman H. Dyer, director, state department of health, Charleston; "Local Responsibility for Providing Local Health Services," Dr. Eugene A. Gillis, regional medical director, region 3, U. S. Public Health Service, Washington, D. C.; "Public Health Career Evaluation, Based upon Study in Charleston and Kanawha County," A. L. Lively, sanitarian, Kanawha-Charleston Health Department, Charleston; and a panel discussion, "Local Responsibility for Providing Local Health Services," with Fred J. Holter, Ph.D., Morgantown, as moderator. Dr. Samuel M. Wishik, Pittsburgh, and Ruth G. Taylor, Children's Bureau, Washington, D. C., will present papers on current trends in maternal and child health. Dr. Dyer will be the master of ceremonies at the annual dinner Thursday.

GENERAL

Index Number of The Journal.—The index for the current volume [158] of THE JOURNAL will be printed in the Sept. 10 issue.

Joint Meeting of Physiologists.—The Society of General Physiologists will hold its annual meeting Sept. 9 to 10 jointly with the American Physiological Society, which has scheduled its annual meeting for Sept. 6 to 9 at Tufts University, Medford, Mass. The Society of General Physiologists will hold its annual meeting in the Marine Biological Laboratory, Woods Hole, Mass. The Medford meetings will open Tuesday with a teaching course, "The Teaching of Fluids, Electrolytes and Acid-Base" (1:30-7:30 p. m.). For the joint sessions, 351 papers have been scheduled.

Southwestern Surgical Congress.—The seventh annual meeting of the Southwestern Surgical Congress (originally scheduled a week later) will convene Sept. 5-7 at the Hotel Muehlebach, Kansas City, Mo. The guest speakers will include Drs. William P. Longmire Jr., Los Angeles; Frederick L. Reichert, San Francisco; and J. Englebert Dunphy, Boston, each of whom will serve as moderator of a panel discussion. On successive days an illustrated program will be presented by St. Louis University School of Medicine, University of Kansas School of Medicine, Kansas City, and Washington University School of Medicine, St. Louis.

Deputy Director of Mental Treatment Wanted.—The California State Department of Mental Hygiene will soon appoint a deputy director for hospital medical services (headquarters in Sacramento), to be in full charge of its treatment program, which serves 44,722 patients in 14 hospitals. Applications will be accepted through the State Personnel Board, 801 Capitol Ave., Sacramento, until Sept. 6. The position pays $1,250 a month salary to start, with increases to $1,350. The deputy director is responsible for organizing and coordinating the medical, psychiatric, and allied treatment programs of the 14 state hospitals for the mentally ill and mentally deficient. Applicants must have a certificate in psychiatry or mental hospital administration, or be eligible for such a certificate, and have three years' administrative experience in medicine and psychiatry. Selection will be made after a civil service examination in Sacramento Sept. 27.

Fulbright Lecturers Needed in Italy.—The Conference Board of Associated Research Councils, Committee on International Exchange of Persons, announces that the universities of Turin and Padua would welcome a lecturer for one term in one aspect of medicine or surgery. At Padua there is special interest in the use of radioactive isotopes in physiopathological and clinical investigations of blood diseases. A knowledge of Italian is essential. These openings refer to applications for awards under the 1956-1957 program for Italy under the Fulbright Act. Announcement is also made of the establishment of a National Institute for Nutrition in Rome by the Italian Research Council. The institute, affiliated with the University of Rome and said to have excellent equipment and facilities, proposes to expand its research on biological and social aspects of nutrition and would welcome the cooperation of an American specialist.

American Fracture Association.—The 16th annual meeting of the American Fracture Association will be held at the Hotel Fontainebleau, Miami Beach, Fla., Sept. 19-22, under the presidency of Dr. Henry W. Meyerding, Rochester, Minn. Speakers will include Drs. Harrison L. McLaughlin and Walter D. Ludlum Jr., New York; John Royal Moore and Anthony F. DePalma, Philadelphia; Earl D. McBride, Oklahoma City; Peter B. Wright, Augusta, Ga.; I. William Nachlas, Baltimore; John B. Erich, Rochester, Minn.; and Arthur H. Weiland, Miami, Fla. A dinner dance has been scheduled for Monday evening, a two hour water cruise for Tuesday afternoon, and the annual banquet (dress optional) for Wednesday evening. The association is planning a postconvention tour to Havana, Cuba, where a clinical program will be presented Sept. 26-27. For information, communicate with Dr. Herman W. Wellmerling, Secretary-General, 610 Griesheim Bldg., Bloomington, Ill.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

	Aug. 6, 1955		
Area	Paralytic Type	Total Cases Reported	Aug. 7, 1954, Total
New England States			
Maine	9	11	4
New Hampshire	..	16	..
Vermont	2	2	..
Massachusetts	156	309	14
Rhode Island	2	19	4
Connecticut	14	38	18
Middle Atlantic States			
New York	35	102	50
New Jersey	..	21	36
Pennsylvania	..	30	40
East North Central States			
Ohio	9	42	104
Indiana	9	29	39
Illinois	18	68	78
Michigan	18	78	95
Wisconsin	50	105	19
West North Central States			
Minnesota	6	28	28
Iowa	12	45	83
Missouri	5	9	30
North Dakota	..	2	5
South Dakota	..	8	1
Nebraska	14	28	32
Kansas	5	19	29
South Atlantic States			
Delaware	2	7	4
Maryland	4	8	8
District of Columbia	1	5	3
Virginia	8	25	39
West Virginia	4	6	10
North Carolina	5	23	54
South Carolina	6	21	15
Georgia	8	15	40
Florida	3	12	60
East South Central States			
Kentucky	21	38	48
Tennessee	1	6	54
Alabama	1	4	19
Mississippi	4	10	30
West South Central States			
Arkansas	2	9	9
Louisiana	8	14	18
Oklahoma	4	21	34
Texas	35	78	152
Mountain States			
Montana	2	4	3
Idaho	9	16	4
Wyoming	..	..	11
Colorado	3	9	15
New Mexico	2	6	11
Arizona	..	4	7
Utah	..	1	8
Nevada	..	2	9
Pacific States			
Washington	6	13	14
Oregon	7	10	9
California	11	33	211
Territories and Possessions			
Alaska	1	2	18
Hawaii	6	8	3
Puerto Rico	4	4	..
Total	532	1,423	1,629

Cancer Society Offers Clinical Fellowships.—The American Cancer Society announces to (1) editors of professional journals in general medicine and in specialties, (2) executive officers of teaching institutions approved by the Council on Medical Education and Hospitals of the American Medical Association, (3) coordinators of cancer teaching programs in medical schools, and (4) chiefs of service who are now, or who have been, directly responsible for training of American Cancer Society clinical fellows the availability of clinical fellowships for the next institutional year, July 1, 1956, to June 30, 1957. Applicants must be graduates of class A medical schools in the United States, its territories, or Canada, not be over 40 years of age, and be citizens of the United States. The annual stipend of clinical fellows of the American Cancer Society is $3,600. Application for one or more fellowships should be addressed to Dr. Brewster S. Miller, American Cancer Society, 521 W. 57th St., New York 19, via the executive officer of the institution. The deadline for filing applications is Sept. 15.

Meeting of Biological Photographic Association.—The 25th anniversary meeting of the Biological Photographic Association will be held at the Wisconsin Hotel, Milwaukee, Aug. 30-Sept. 2. Dr. John S. Hirschboeck, dean, Marquette University School of Medicine, Milwaukee, will deliver the address of welcome. The Tuesday afternoon program will include:

Aims and Program of the Medical Audio-Visual Institute, Mr. J. Edwin Foster, director, Medical Audio-Visual Institute.

Color Television in Medicine, Lieut. Stephen Dittman, M.S.C., medical audio-visual department, Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, D. C.

Television broadcast from WTMJ-TV on "Armed Forces Institute of Pathology, Medical Illustration Service," Herman Van Cott, Washington, D. C. (broadcast to be picked up by RCA color receivers at convention).

RCA Color Television Demonstration, discussion by Mr. L. E. Flory, David Sarnoff Research Center, Princeton, N. J.

A tour of the General Electric X-Ray Corporation, Wednesday, will precede luncheon in the Brooks Memorial Union, with Marquette University as host. The guest speaker will be the Very Reverend Edward J. O'Donnel, S.J., president, Marquette University. After a tour of new University Libraries, Thomas S. Jones, A.B., professor emeritus of medical and dental illustration, University of Illinois College of Medicine, Chicago, will present "The Photographer's Responsibility in Medical Education," and Dr. G. Kasten Tallmadge, professor of the history of medicine, Marquette University School of Medicine, will discuss "Influence of the Fine Arts in Medical Illustration." The Thursday session will open at 9 a. m. with a symposium on medical movie-making. Dr. Joseph M. Lubitz, Wood, Wis., guest speaker at luncheon, will have as his subject "The Role of Medical Illustration in the Hospitals." The Eastman Kodak Company will be host at the cocktail hour preceding the awards banquet, at which Ralph Creer, Secretary, A. M. A. Committee on Medical Motion Pictures, will present "Horizons Unlimited." Information may be obtained from Leo Massopust, Marquette University School of Medicine, general chairman of the meeting.

FOREIGN

International Meeting on Military Medicine.—The International Congress of Military Medicine and Pharmacy will be held in Istanbul, Turkey, Aug. 28-Sept. 1. Questions to be considered include: Protection of Health Services During War; Recruiting Crisis in the Health Services of Armies; and Instruction in the Schools of the Health Services. The International Committee of Military Medicine and Pharmacy has announced that the 15th International Congress of Military Medicine and Pharmacy will meet in Buenos Aires, Argentina, in October, 1956. Questions to be considered at that meeting will include: Medical Services in Armored and Motorised Operations; Reduction of Noise in the Armed Forces; Radiation Defense in Military Medicine; Relations Between the Command of the Troops and Medical Services; and Study of the International Nomenclature of Medicaments Used by the Armed Forces and of an International Military Pharmaceutical Formulary.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

American Medical Association Public Relations Institute, Drake Hotel, Chicago, Aug. 31- Sept. 1. Mr. Leo E. Brown, 535 N. Dearborn St., Chicago 10, Director.

National Conference on Physicians and Schools, Moraine-on-the-Lake Hotel, Highland Park, Ill., Oct. 12-14. Dr. W. W. Bauer, 535 N. Dearborn St., Chicago, Director.

Academy of Psychosomatic Medicine, Hotel Plaza, New York, Oct. 6-8. Dr. Ethan Allan Brown, 75 Bay State Road, Boston 15, *Secretary.*

American Academy for Cerebral Palsy, Claridge Hotel, Memphis, Tenn., Oct. 10-12. Dr. Robert A. Knight, 869 Madison Ave., Memphis 3, Tenn., Secretary.

American Academy of Ophthalmology and Otolaryngology, Palmer House, Chicago, Oct. 9-14. Dr. W. L. Benedict, 100 First Avenue Bldg., Rochester, Minn., Executive Secretary.

American Academy of Pediatrics, Palmer House, Chicago, Oct. 3-6. Dr. E. H. Christopherson, 610 Church St., Evanston, Ill., Executive Secretary.

American Association of Medical Record Librarians, LaSalle Hotel, Chicago, Oct. 3-7. Miss Doris Gleason, 510 N. Dearborn St., Chicago 10, Executive Director.

American Association of Nursing Homes, Hotel Muehlebach, Kansas City, Mo., Sept. 19-21. Mr. Ira O. Wallace, P.O. Box 366, New Castle, Ky., Secretary.

American Association of Obstetricians and Gynecologists, The Homestead, Hot Springs, Va., Sept. 8-10. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

American College of Hospital Administrators, Convention Hall, Atlantic City, N. J., Sept. 17-19. Mr. Dean Conley, 620 North Michigan Ave., Chicago 11, Executive Director.

American Congress of Physicial Medicine and Rehabilitation, Hotel Statler, Detroit, Aug. 28-Sept. 2. Dr. Frances Baker, 30 North Michigan Ave., Chicago 2, Secretary.

American Dental Association, San Francisco, Oct. 17-20. Dr. Harold Hillenbrand, 222 East Superior St., Chicago 11, General Secretary.

American Fracture Association, Hotel Fontainebleau, Miami Beach, Fla., Sept. 19-22. Dr. Homer D. Junkin, Paris Hospital, Paris, Ill., Secretary.

American Heart Association, Yung Hotel, New Orleans, Oct. 22-26. Mr. Irving Hexter, 44 East 23d St., New York 10, Secretary.

American Hospital Association, Traymore Hotel, Atlantic City, N. J., Sept. 19-22. Dr. Edwin L. Crosby, 18 East Division St., Chicago 10, Director.

American Medical Writers' Association, Jefferson Hotel, St. Louis, Sept. 30-Oct. 1. Dr. Harold Swanberg, P.O. Drawer 110, Quincy, Ill., Secretary.

American Physiological Society Fall Meeting, Tufts College, Medford, Mass., Sept. 6-9. Dr. Allan C. Burton, Univ. of Western Ontario, London, Ont., Canada, Secretary.

American Roentgen Ray Society, Palmer House, Chicago, Sept. 20-23. Dr. Barton R. Young, Germantown Hospital, Philadelphia 44, Secretary.

American Society of Plastic and Reconstructive Surgery, Atlantic City, N. J., Sept. 25-30. Dr. Kenneth L. Pickrell, Duke Hospital Durham, N. C., Secretary.

Association of American Physicians and Surgeons, Chicago, Oct. 7-8. Mr. Harry E. Northam, 185 N. Wabash Ave., Chicago 1, Executive Secretary.

Association of Life Insurance Medical Directors of America, Hotel Statler, New York, Oct. 19-21. Dr. Henry B. Kirkland, P. O. Box 594, Newark, N. J., Secretary.

Biological Photographic Association, Wisconsin Hotel, Milwaukee, Aug. 30-Sept. 2. Miss Jane H. Waters, Box 1668, Grand Central P.O., New York 17, Executive Secretary.

Central Association of Obstetricians and Gynecologists, Deshler-Hilton Hotel, Columbus, Ohio, Oct. 5-8. Dr. Edwin J. DeCosta, Suite 602, 116 S. Michigan Ave., Chicago 3, Secretary.

Central Neuropsychiatric Association, The Broadmoor, Colorado Springs, Colo., Oct. 20-22. Dr. Hamilton Ford, 112 North Boulevard, Galveston, Tex., Seceretary.

Clinical Orthopaedic Society, Skirvin Hotel, Oklahoma City, Sept. 30-Oct. 1. Dr. Marcus J. Stewart, 869 Madison Ave., Memphis, Tenn., Executive Secretary.

College of American Pathologists, Drake Hotel, Chicago, Oct. 10-15. Dr. Arthur H. Dearing, 203 N. Wabash Ave., Chicago 1, Executive Secretary.

Colorado State Medical Society, Shirley-Savoy Hotel, Denver, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2, Executive Secretary.

Delaware, Medical Society of, Delaware Academy of Medicine, Wilmington, Oct. 17-18. Dr. Norman L. Cannon, 621 Delaware Ave., Wilmington, Secretary.

District of Columbia, Medical Society of the, Hotel Statler, Washington, D. C., Oct. 10-12. Mr. Theodore Wiprud, 1718 M St., N.W., Washington 6, D. C., Executive Director.

Indiana State Medical Association, French Lick Springs Hotel, French Lick, Oct. 16-19. Mr. James A. Waggener, 23 East Ohio St., Indianapolis 4, Executive Secretary.

Industrial Health Conference, Shamrock Hotel, Houston, Texas, Sept. 22-23. Dr. Sidney Schnur, 411 Medical Arts Bldg., Houston 2, Texas, Chairman.

Kansas City Southwest Clinical Society, Municipal Auditorium, Kansas City, Mo., Oct. 3-6. Dr. W. M. Kitchen, 306 E. Twelfth St., Kansas City 6e, Mo., Secretary.

Kentucky State Medical Association, Louisville, Sept. 27-29. Mr. J. P. Sanford, 620 S. Third St., Louisville, Executive Secretary.

Michigan State Medical Society, Pantlind Hotel, Grand Rapids, Sept. 26-30. Dr. L. Fernald Foster, 606 Townsend St., Lansing 5, Secretary.

Midwest Conference on Rheumatic Diseases, Henry Ford Hospital, Detroit, Oct. 5. Dr. J. J. Lightbody, 7338 Woodward Ave., Detroit 2, Medical Director.

Mississippi Valley Medical Society, Jefferson Hotel, St. Louis, Sept. 28-30. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

Mississippi Valley Trudeau Society, Hotel Savery, Des Moines, Iowa, Oct. 14. Dr. Harold G. Curtis, Sunny Acres, Cuyahoga County Tuberculosis Hospital, Cleveland 22, Chairman, Program Committee.

Montana Medical Association, Baxter Hotel, Bozeman, Sept. 15-18. Mr. L. R. Hegland, P.O. Box 1692, Billings, Executive Secretary.

New England Health Institute, Colby College, Waterville, Me., Aug. 30-Sept. 1. Dr. Edward W. Colby, City of Portland Health Dept., Portland, Me., Chairman.

New Hampshire Medical Society, Mt. Washington Hotel, Bretton Woods, Sept. 29-Oct. 1. Dr. Warren H. Butterfield, 18 School St., Concord, Secretary.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls, Tex., Sept. 17. Dr. E. C. Bebb, Broad St., Wichita Falls, Tex., Chairman.

Oregon State Medical Society, Hotel Heathman, Portland, Sept. 28-Oct. 1. Dr. Richard R. Catter, 1020 S.W. Taylor St., Portland 5, Secretary.

Pennsylvania, Medical Society of the State of, William Penn Hotel, Pittsburgh, Sept. 18-23. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

Postgraduate Assembly in Endocrinology and Metabolism, Indianapolis, Sept. 26-Oct. 1. Dr. John J. Mahoney, Assistant Dean, Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis 7.

Regional Meetings, American College of Physicians:

Jamestown, N. D., Sept. 10. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

Madison, Wis., Oct. 15. Dr. Howard Wakefield, 122 S. Michigan Ave., Chicago 3, Governor.

Society of General Physiologists, Marine Biological Laboratory, Woods Hole, Mass., Sept. 9-10. Dr. A. M. Shanes, National Institutes of Health, Bethesda 14, Md.

Southwestern Surgical Congress, Muehlebach Hotel, Kansas City, Mo., Sept. 5-7. Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secretary.

Tennessee Valley Medical Assembly, Read House, Chattanooga, Tenn., Oct. 3-4. Dr. Harry E. Jones, 109 Medical Arts Bldg., Chattanooga 2, Tenn., Secretary.

U. S. Chapter, International College of Surgeons, Convention Hall, Philadelphia, Sept. 12-15. Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago 10, Secretary.

Utah State Medical Association, Union Bldg., Salt Lake City, Sept. 8-10. Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2, Executive Secretary.

Vermont State Medical Society, Mt. Washington Hotel, Bretton Woods, N. H., Sept. 29-Oct. 1. Dr. James P. Hammond, 337 South St., Bennington, Secretary.

Virginia, Medical Society of, Hotel Jefferson, Richmond, Oct. 16-19. Mr. Robert I. Howard, 105 West Franklin St., Richmond, Executive Secretary.

Washington State Medical Association, Olympic Hotel, Seattle, Sept. 11-14. Dr. Frederick A. Tucker, 1309 Seventh Ave., Seattle 1, Secretary.

Western Association of Railway Surgeons, Las Vegas, Nev., Sept. 22-24. Dr. Leo L. Stanley, 1322 Fifth Ave., San Rafael, Calif., Secretary.

FOREIGN AND INTERNATIONAL

Canadian Society for the Study of Fertility, Royal York Hotel, Toronto, Ont., Canada, Oct. 6-8. Dr. Earl R. Plunkett, 469 Waterloo St., London, Ont., Canada, Secretary.

Congress of International Association of Limnology, Helsinki, Finland, July 26-Aug. 7, 1956. For information address: Dr. H. Luther, Snellmansgatan 16 C 36, Helsinki, Finland.

Congress of International Association of Logopedics and Phoniatrics, Barcelona, Spain, Sept. 3-7, 1956. Dr. J. Perello, Provenza 319, Barcelona 9, Spain, Secretary-General.

Congress of International Society for Research on Anesthesia, Miami Beach, Fla., U.S.A., Mar. 12-15, 1956. For information write: Dr. R. J. Whitacre, 13951 Terrace Road, Cleveland 12, Ohio, U. S. A.

Congress of International Union of Railway Medical Services, Dubrovnik, Yugoslavia, Sept. 19-24. Dr. Jovanovic, Head Office, Yugoslav Railway, Belgrade, Yugoslavia, President.

Congress of International Union Against Venereal Diseases, Naples, Italy, Sept. 25-28. For information address: Prof. Monacelli, University of Naples, Dept. of Dermatology, Naples, Italy.

Congress of Latin Society of Ophthalmology, Madrid, Spain, April 24-28, 1956. For information address: Dr. Costi, Montalban 3, Madrid, Spain.

International Academy of Legal and Social Medicine, Plenary Conference, Genoa, Italy, Oct. 13-17. Prof. Domenico Macaggi, Institut de Medicine legale, Universite de Genes, Genes, Italy, President.

International Conference of Medical Librarians and Reference Librarians, University Hall, Brussels, Belgium, Sept. 10. For information address: Miss Ch. de Looze, Librarian % Oeuvre Nationale Belge de Defense contra la Tuberculose, 56, rue de la Concorde, Brussels, Belgium.

International Congress of Allergology, Rio de Janeiro, Brazil, S. A., Nov. 6-13. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7^{e}, France, Secretary General.

International Congress of Angiology and Histopathology, Fribourg, Switzerland, Sept. 2-5. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8^{e}, France.

International Congress of Anthropological and Ethnological Sciences, Philadelphia, Pa., U. S. A., Sept. 2-9, 1956. Dr. William N. Fenton, National Research Council, Division of Anthropology and Psychology, 2101 Constitution Avenue, Washington 25, D. C., U. S. A., Secretary-General.

International Congress of Criminology, London, England, Sept. 11-18. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

International Congress of European Society of Haematology, Freiburg i,Br., Germany, Sept. 20-24. Prof. Dr. L. Heilmeyer, Hugstetter Strasse 55, Freiburg i,Br., Germany, Chairman.

International Congress for the History of Science, Florence and Milan, Italy, Sept. 3-10, 1956. Dr. M. L. Bonelli, Instituto di Ottica, Arcetri, Florence, Italy, Secretary-General.

International Congress of International College of Surgeons, Buenos Aires, Argentina, S. A., Nov. 19-24, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

International Congress of International Society of Bronchoesophagology, Buenos Aires, Argentina, S. A., Oct. 28-29. Dr. Juan Carlos Arauz, Cangallo 4015, Buenos Aires, Argentina, S. A., Secretary General.

International Congress of Librarianship and Documentation, Brussels, Belgium, Sept. 11-18. For information write: Dr. A. C. Breycha-Vauthier, Librarian, United Nations, Geneva, Switzerland.

International Congress of Medical Professional Jurisdiction, Medical Ethics, and Comparative Medical Law, Paris, France, Sept. 30-Oct. 3. Dr. J. R. DeBray, Conseil National de L'Ordre des Medécins, 60, Boulevard Latour-Maubourg, Paris 7e, France, Secretary General.

International Congress of Military Medicine and Pharmacy, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, International Committee of Military Medicine and Pharmacy, 79 rue Saint Laurent, Liege, Belgium, *Secretary-General*.

International Congress of Neo-Hippocratic Medicine, Montecatini, Terme, Italy, May 20-22, 1956. Prof. P. Delore, 13 rue Jarente, Lyon, France, Secretary-General.

International Congress of Neuropathology, London, England, Sept. 12-17. Dr. W. H. McMenemey Maida Vaie Hospital for Nervous Diseases, London, W.9, England, Secretary.

International Congress of Paediatrics, Copenhagen, Denmark, July 22-27, 1956. Professor P. Plum, Rigshospitalet, Copenhagen, Denmark, President.

International Congress of Physical Medicine, Copenhagen, Denmark, August 20-24, 1956. Dr. B. Strandberg, Kobenhavns amts sygehus i Gentofte, Dept. of Rheumatology and Physical Medicine, Hellerup, Denmark, Honorable Secretary.

International Congress of Radiology, Mexico, D. F., Mexico, July 22-28, 1956. Dr. Jose Noriega, Tepic 126 (2e piso), Mexico, D. F. 7, Mexico, Secretary General.

International Congress on Urinary Lithiasis, Evian, France, Sept. 2-4. Mr. Rossollin-Grandville, Direction Cachet, Evian (Hte-Savoie), France, Secretary General.

International Congress of World Confederation for Physical Therapy, New York, New York, U. S. A., June 17-23, 1956. For information address: Miss Mildred Elson, American Physical Therapy Association, 1790 Broadway, New York 19, New York, U. S. A.

International General Medical Congress, University of Rosario Medical College, Rosario, Argentina, S. A., Nov. 7-12. Dean Jose Imhoff, Santa Fé 3100, Rosario, Argentina, S. A., Chairman.

International Medical Congress, Verona, Italy, Sept. 1-4. For information write: c/o Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

International Office of Documentation of Military Medicine, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

International Physiological Congress, Brussels, Belgium, July 29-Aug. 5, 1956. For information address: Prof. J. Reuse, Faculte de Medicine et de Pharmacie, 115 Boulevard de Waterloo, Brussels, Belgium.

International Society for the Study of Biological Rhythms, Stockholm, Sweden, Sept. 15-17. For information write: Prof. Ture Petrén, Karolinska Institutet, Stockholm 60, Sweden.

International Vitamin E Congress, Cini Foundation, Island of San Giorgio Maggiore, Venice, Italy, Sept. 5-8. Prof. Emilio Raverdino, via Pietro Verri 4, Milano, Italy, Secretary.

Neuroradiologic Symposium, London, England, Sept. 13-17. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

Pan American Congress of International College of Surgeons, Mendoza City, Argentina, S. A., Oct. 22-26. For information address: Secretary, Caseros Av. 2154, Buenos Aires, Argentina, S. A.

Pan American Congress of Ophthalmology, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, Secretary General.

Pan American Medical Social Convention, Bogota, Colombia, S. A., Oct. 15-22. Dr. Leopoldo E. Araujo, Avenida de los Presidentes Num. 506, Apartado 2589, La Habana, Cuba, Secretary.

Pan American Medical Women's Alliance, Santiago, Chile, March 6-13, 1956. For information address: Dr. Eva Cutright, 458 Beall Ave., Wooster, Ohio, U. S. A.

Venezuelan Congress of Medical Sciences, Caracas, Venezuela, S. A., Nov. 18-26. Dr. A. L. Briceno Rossi, Apartado 4412, Ofic. del Este, Caracas, Venezuela, S. A., Secretary General.

World Congress of Anesthesiologists, Scheveningen, Netherlands, Sept. 5-10. For information write: Mr. W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven, Netherlands.

World Congress on Fertility and Sterility, Naples, Italy, May 18-26, 1956. For information address: Prof. G. Tesauro, S. Andrea della Dame, 19, Naples, Italy.

World Medical Association, Vienna, Austria, Sept. 20-26. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination*. Montgomery, June 19-21. Sec., Dr. D. G. Gill, State Office Bldg., Montgomery.

Arizona:* *Examination*. Phoenix, Oct. 12-14. *Reciprocity*. Phoenix, Oct. 15. Exec. Sec., Mr. Robert Carpenter, 411 Security Bldg., Phoenix.

Arkansas:* *Examination*. Little Rock, Nov. 10-11. Sec., Dr. Joe Verser, Harrisburg.

California: *Written*. Los Angeles, Aug. 22-25; and Sacramento, Oct. 17-20. *Oral and Clinical Examinations for Foreign Medical School Graduates*. Los Angeles, Aug. 21; and San Francisco, Nov. 13. *Oral Examination for Reciprocity Applications*. Los Angeles, Aug. 20; and San Francisco, Nov. 12. Sec., Dr. Louis E. Jones, Room 536, 1020 N St., Sacramento.

Colorado:* *Examination*. Denver, Dec. 6-7. Final date for filing application is Nov. 4. *Reciprocity*. Denver, Oct. 11. Final date for filing application is Sept. 12. Exec. Sec., Mrs. Beulah H. Hudgens, 831 Republic Bldg., Denver 2.

Connecticut:* *Regular. Examination*. Hartford, Nov. 8-10. Sec., Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic*. Derby, Nov. 8-19. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: *Examination*. Dover, Jan. 10-12. *Reciprocity*. Dover, Jan. 19. Sec., Dr. Joseph S. McDaniel, Dover.

Florida:* *Examination*. Miami Beach, Nov. 20-21. Sec., Dr. Homer L. Pearson, 901 N. W. 17th St., Miami.

Georgia: *Examination*. Atlanta, Oct. 5-6. *Reciprocity*. Atlanta, Oct. 7. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

Idaho: *Examination and Reciprocity*. Boise, Jan. 9-11. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

Illinois: *Examination and Reciprocity*. Chicago, Oct. 11-13. Supt. of Registration, Mr. Fredric B. Selcke, State House, Springfield.

Indiana: *Examination*. Indianapolis, June. Exec. Sec., Miss Ruth V. Kirk, 538 K. of P. Bldg., Indianapolis.

Kansas: *Examination and Endorsement*. Topeka, Dec. 7-8. Sec., Dr. Lyle F. Schmaus, New Brotherhood Bldg., Kansas City.

Kentucky: *Examination*. Louisville, Dec. 5-7. Asst. Sec., Mr. R. F. Dixon, 620 S. 3rd St., Louisville.

Maine: *Examination and Reciprocity*. Portland, Nov. 8-9. Sec., Dr. Adam P. Leighton, Portland.

Maryland: *Examination*. Baltimore, Dec. 13-16. Exec. Sec., Miss Hannah A. McCarthy, 1215 Cathedral St., Baltimore 1.

Michigan:* *Examination*. Lansing, Oct. 12-14. Sec., Dr. J. Earl McIntyre, 118 Stevens T. Mason Bldg., Lansing.

Minnesota:* *Examination and Reciprocity*. Minneapolis, Oct. 18-20. Sec., Dr. F. H. Magney, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity*. Jackson, December. Asst. Sec., Dr. R. N. Whitfield, State Board of Health, Jackson.

Montana: *Examination and Reciprocity*. Helena, Oct. 4-5. Sec., Dr. Sidney A. Cooney, 7 West 6th Ave., Helena.

Nebraska:* *Examination*. Omaha, June 18-20. Director, Bureau of Examining Boards, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

Nevada:* *Examination and Reciprocity*. Reno, Oct. 4. Sec., Dr. G. H. Ross, 112 North Curry St., Carson City.

New Hampshire: *Examination and Reciprocity*. Concord, Sept. 14. Sec., Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: *Examination*. Trenton, Oct. 18-21. Sec., Dr. Patrick H. Corrigan, 28 W. State St., Trenton.

New Mexico:* *Examination and Reciprocity*. Santa Fe, Nov. 21-22. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave., Santa Fe.

New York: *Examination*. Albany, Buffalo, New York City and Syracuse, Oct. 4-7. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany.

North Carolina: *Reciprocity*. Asheville, Oct. 31. Sec., Dr. Jos. J. Combs, 716 Professional Bldg., Raleigh.

North Dakota: *Examination*. Grand Forks, Jan. 4-6. *Reciprocity*. Grand Forks, Jan. 7. Sec., Dr. C. J. Glaspel, Box 228, Grafton.

Ohio: *Reciprocity*. Columbus, Oct. 4. *Examination*. Columbus, Dec. 15-17. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma:* *Endorsement*. Oklahoma City, Sept. 4. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon:* *Reciprocity*. Portland, Oct. 13-15. *Examination*. Portland, January. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

Pennsylvania: *Examination*. Philadelphia, January. Acting Sec., Miss Marguerite G. Steiner, Box 911, Harrisburg.

Rhode Island:* *Examination*. Providence, Oct. 6-7. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Tennessee:* *Examination*. Memphis, Sept. 28-29. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis.

Virginia: *Examination*. Richmond, Dec. 7-9. *Reciprocity*. Richmond, Dec. 6. Final date for filing application is Nov. 21. Address the Secretary, 631 First St. S.W., Roanoke.

WEST VIRGINIA: *Reciprocity*. Charleston, Oct. 10. Sec., Dr. N. H. Dyer, Charleston 5.

WISCONSIN:* *Reciprocity*. Madison, Oct. 21. Sec., Dr. Thomas W. Tormey, Jr., 1140 State Office Bldg., Madison.

WYOMING: *Examination*. Cheyenne, Oct. 3. Sec., Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. John E. Kennedy, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: *Examination*. Tucson, Sept. 20. Sec., Dr. H. D. Rhodes, University of Arizona, Tucson.

ARKANSAS: *Examination*. Little Rock, Oct. 4. Sec., Dr. S. C. Dellinger, Zoology Dept., University of Arkansas, Fayetteville.

COLORADO: *Examination*. Denver, Sept. 7-8. Final date for filing application is Aug. 24. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

CONNECTICUT: *Examination*. New Haven, Oct. 8. Address: State Board of Healing Arts, 258 Bradley St., New Haven 10.

DISTRICT OF COLUMBIA: *Examination*. Washington, Oct. 24-25. Deputy, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington 6.

FLORIDA: *Examination*. Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, Box 340, Gainesville.

IOWA: *Examination*. Des Moines, Oct. 11. Sec., Mr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination and Endorsement*. Detroit and Ann Arbor, Oct. 14-15. Sec., Mrs. Anne Baker, 410 W. Michigan Ave., Lansing 15.

MINNESOTA: *Examination*. Minneapolis, Oct. 4-5. Sec., Mr. Raymond N. Bieter, 126 Millard Hall, University of Minnesota Campus, Minneapolis.

NEBRASKA: *Examination*. Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

NEVADA: *Examination*. Reno, Oct. 4. Sec., Dr. Donald G. Cooney, Box 9005, University of Nevada, Reno.

OKLAHOMA: *Examination*. Oklahoma City, August 26-27. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination*. Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

TENNESSEE: *Examination*. Memphis, Sept. 22-23. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

TEXAS: *Examination*. Austin and Houston, Oct. 21-22. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

WISCONSIN: *Examination*. Madison, Sept. 23; Milwaukee, Dec. 3. Sec., Mr. William H. Barger, 621 Ransom St., Ripon.

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity*. On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

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*Basic Science Certificate required.

MAGAZINE–TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Monday, Aug. 29

NBC-TV, 9 p. m. EDT. "Medic" again takes up the role medicine would play after an atomic attack in the rerun of "Flash of Darkness."

Tuesday, Aug. 30

CBS-TV, 10:30 p. m. EDT. "The Search" presents the second of two reports from Tulane University entitled "New Hope for the Mentally Ill."

Wednesday, Aug. 31

NBC-TV, 11 a. m. EDT. "Medical and Health News with Howard Whitman," a feature on the daily "Home" program, reports on activities of the American Medical Association in a special pickup from Chicago.

MAGAZINES

Saturday Evening Post, Aug. 20, 1955

"Let Those Crash Victims Lie!" by Greer Williams

"The damage that may be done to a fractured leg or spine because of ignorant handling is often greater than that of the initial accident," says Dr. Robert H. Kennedy, former chairman of the American College of Surgeons' Committee on Trauma. The article points out that: "If you're hurt on the highway, there's a three-in-ten chance you'll be mishandled before you reach the hospital" and recommends that crash victims be permitted to lie until expert help arrives. The author also mentions the dangers involved in rushing accident cases to the hospital at excessive speeds. He says: "Thirty-five miles an hour is generally regarded as fast enough for transporting patients."

Parade, Aug. 28, 1955

"The Boy Who Feels No Pain"

A report from Pembury, Kent, England, about a boy with a condition called ganglioneuropathy. "Something is wrong with the ganglia (nerve centers) which carry the sensation of pain to the brain." He must wear special padded clothing to protect him from injury and is kept home from school because children kick and punch him to verify his malady.

Reader's Digest, September, 1955

"How It Feels to Have a Heart Attack," by Robert Wallace

Condensation of a *Life* article which tells in a dramatic, narrative fashion how it feels to suffer a heart attack.

"Cancer and a Woman's Sex," by Emerson Day, M.D.

A cancer specialist answers questions asked by women on the relationship between her sex and cancer. Originally a *Woman's Home Companion* article.

"Medical Sleuth Extraordinary," by Paul de Kruif

"Good general practitioners are often keen diagnosticians, but sometimes they are stumped by unusually enigmatic cases. Then they're likely to ask help from doctors called internists, the detectives of the medical profession." In an article condensed from *Today's Health*, Mr. de Kruif explains the functions of an internist and tells how a physician obtains certification from the American Board of Internal Medicine.

"Hospitals Are Everybody's Business," by Elsie McCormick

Industry's Advisory Board for Hospitals has 200 experts ready to give free advice on time and labor-saving methods to hospitals in the Raritan Valley area of New Jersey. Chapters of the Society for the Advancement of Management have hospital-aid committees in operation in various towns, and similar work is being done by the American Institute of Industrial Engineers. (Condensed from *The American Mercury*)

"Things to Know About Sleep," by Blake Clark and Norman Dine

A series of questions and answers on the subject of sleep including "why do we sleep," "how much sleep is normal," "is snoring curable." The original article appeared in *Your Life*.

Better Homes and Gardens, September, 1955

"New Victories Predicted for Medicine!" by Donald G. Cooley

The author reports on scientific material presented at the American Medical Association's annual meeting in Atlantic City. "Family doctors and specialists shared knowledge, brought each other up-to-date on latest advances in medicine and surgery and went home to get a running start on brilliant advances in medical science forecast for the next half century."

Ladies' Home Journal, September, 1955

"Let's Stop Killing and Crippling Our Children," by Harry F. Dietrich, M.D., and Barbara Berch Jamison

"Between 11,000 and 13,000 children are killed in this country every year and 40,000 to 50,000 other children are permanently crippled and disabled—'by accident.'" The article urges a combination of preventive measures and an educational program to help reduce the number of accidents caused by burning, drowning, poisoning, falls, crushing, and "automotive mayhem."

DEATHS

O'Leary, Paul Arthur ⊕ Rochester, Minn.; born in Brooklyn, N. Y., Nov. 11, 1891; Long Island College Hospital, Brooklyn, N. Y., 1915; interned at the Long Island College Hospital in Brooklyn; on Jan. 1, 1917, came to the Mayo Clinic as an assistant in dermatology and syphilology; in May, 1924, was appointed head of the section of dermatology and syphilology, retaining that post until July, 1953, when he became a senior consultant; in 1924 he was appointed professor of dermatology and syphilology in the Mayo Foundation for Medical Education and Research, a part of the Graduate School of the University of Minnesota; in 1951 president of the staff at the clinic; served during World War I; chairman of the Section on Dermatology of the American Medical Association, 1936-1937; in 1951 president of the Olmsted County Medical Society; past-president of the American Dermatological Association, Minnesota Dermatological Society, and the Chicago Dermatological Society; one of the founders, formerly vice-president, and second president of the American Academy of Dermatology and Syphilology; member of the Pan American Medical Association, New York Academy of Medicine, American Association for the Advancement of Science, Minnesota Academy of Science, Society for Investigative Dermatology, Minnesota Academy of Medicine, American Association of University Professors, Sigma Xi, Alpha Kappa Kappa, and Beta Theta Pi; corresponding member of several foreign societies; honorary member of the Royal Society of Medicine of England, British Association of Dermatologists, German Dermatological Society, Berlin Dermatological Society, Dutch Society of Dermatology and Syphilology, the Hellenic Antivenereal Society of Greece, the Manhattan Dermatological Society, and the Dallas Dermatological Society; in 1950 made an honorary member of Alpha Omega Alpha; fellow of the American College of Physicians; in 1940 secretary-general of the 10th International Congress on Dermatology and Syphilology; specialist certified by the American Board of Dermatology and Syphilology and served as a member of the board from 1938 to 1948; in 1939 appointed a member of the National Advisory Health Council; served also as chairman of the dermatoses investigative committee of the U. S. Public Health Service; editor-in-chief of *Archives of Dermatology and Syphilology* since 1947; associate editor of *American Journal of Syphilis, GP, Der Hautarzt, Dermatologica,* and *Excerpta Medica, Section XIII;* dermatological editor of "Current Therapy" and of "The Book of Health"; collaborated with Dr. John H. Stokes on "Modern Clinical Syphilology"; the *Journal of Investigative Dermatology* honored him by dedicating its March, 1954, issue to him; on the staff of the Rochester Methodist Hospital and St. Mary's Hospital, where he died July 20, aged 64, of cancer of the pancreas.

Heusinkveld, David William ⊕ Cincinnati; born in Fulton, Ill., July 17, 1897; Rush Medical College, Chicago, 1925; in 1934 appointed to the faculty of the University of Cincinnati College of Medicine, where at the time of his death he was assistant clinical professor of medicine; president of the Ohio State Medical Association and for five years served as councilor of the First District; on Feb. 16, 1939, was elected to the board of the Anti-Tuberculosis League, and served this organization in various capacities from that time until his death, when he was Christmas Seal committee chairman, a post he had held for eight years; member of the executive and finance committees and of the medical and programming committees; president of the Anti-Tuberculosis League from 1945 to 1948; member of the American College of Chest Physicians and served on the board of governors of that organization since 1950; president of the Ohio Tuberculosis and Health Association, 1953-1954; past-president of the Academy of Medicine of Cincinnati; charter member of the Ohio Trudeau Society; member of the National Tuberculosis Association and of the American Trudeau Society; in 1949 appointed to the board of trustees of Hospital Care Corporation for Southwestern Ohio, in 1950 vice-president, and in 1952 president; served on the executive committee from 1950; from 1950 to 1952 was on the board of directors of the Cincinnati Chamber of Commerce; roentgenologist for the Cincinnati and Hamilton County health departments; commissioned a second lieutenant in the infantry during World War I; director of chest service in the Good Samaritan Hospital; on the staffs of Bethesda and Dunham hospitals; died in Columbus June 25, aged 57, of a heart attack.

Baketel, H. Sheridan ⊕ St. Davids, Pa.; born in Hopedale, Ohio, Nov. 15, 1872; Dartmouth Medical School, Hanover, N. H., 1895; did postgraduate work at Harvard, and in London and Paris; in 1915 became lecturer in medical economics at the Long Island College Hospital in Brooklyn, N. Y., now known as the State University of New York College of Medicine at New York City, serving as professor of preventive medicine and hygiene from 1915 to 1931, when he became professor emeritus; served during World War I; became a colonel in the Medical Reserve Corps in 1924 and retired in 1949; chairman of the board of trustees at Columbia University College of Pharmacy in New York City from 1938 to 1942; president of the physiological laboratories of Reed and Carnrick of Jersey City and chairman of the Reed and Carnrick Institute for Medical Research; delegate to the U. S. Pharmacopeia Convention from 1930 to 1940; fellow of the American College of Physicians, American Public Health Association, and the New York Academy of Medicine; past-president of the American Medical Editors' Association and the American Pharmaceutical Manufacturing Association; life member of the American Urological Association; member of the Sons of the American Revolution and the Military Order of the World War; past-president of the Dartmouth Medical Alumni Association and past vice-president of Beta Theta Pi; consultant at the Peekskill (N. Y.) Hospital; author of "Treatment of Syphilis"; cofounder and editor-in-chief of *Medical Economics;* at one time editor of the *Medical Times;* died July 7, aged 82, of coronary disease.

Rosenthal, Nathan ⊕ New York City; born in New York City March 14, 1890; Columbia University College of Physicians and Surgeons, New York City, 1913; member of the American Association of Pathologists and Bacteriologists and the American Society of Clinical Pathologists; formerly associate clinical professor of medicine at his alma mater; in 1953 received the first Harlow Brooks medal for research in hematology at the New York Academy of Medicine; founder-member and past-president of the Society for the Study of Blood; member of the Harvey Society, New York Academy of Medicine, and other professional groups; during World War I served at the United States Base Hospital No. 3 in southern France; at one time associate editor of *Blood—The Journal of Hematology;* consulting hematologist at the St. Joseph Hospital in Far Rockaway, Long Beach (N. Y.) Memorial Hospital, Methodist Hospital in Brooklyn, French Hospital, Beth David Hospital, Bronx Hospital, and Harlem Hospital; founder of the hematology laboratory and consulting hematologist at Mount Sinai Hospital, where he served as an intern, research fellow, and chief of the medical clinic, and where he died June 29, aged 65.

Maynard, Carl Wesley ⊕ Pueblo, Colo.; born in 1886; Northwestern University Medical School, Chicago, 1910; specialist certified by the American Board of Pathology; member and past-president of the American Society of Clinical Pathologists; past-president of the Pueblo County Medical Society; fellow of the College of American Pathologists; a charter member and a life member of the Colorado State Pathological Society, which on June 4, 1955, awarded him a distinguished service scroll; consultant and in charge of laboratory at Mennonite Hospital and Sanitarium in La Junta; one of the original founders of the Pueblo Clinic and in charge of the department of pathology; on the consulting staff of Colorado State Hospital; on the staffs of St. Mary Hospital and the Parkview Episcopal Hospital, where he died June 15, aged 68, of rheumatic heart disease.

⊕ Indicates Member of the American Medical Association.

Jones, Harold Houston Sr. ⊕ Winfield, Kan.; born in Viele, Iowa, in 1891; Washington University School of Medicine, St. Louis, 1915; specialist certified by the American Board of Internal Medicine; member of the American Trudeau Society; member of the board of regents and ex-governor of the American College of Physicians; lecturer, Graduate School, University of Kansas; member of the medical advisory board, National Multiple Sclerosis Society; director of research, H. L. Snyder Memorial Research Foundation; served during World War I and was awarded the Silver Star medal; on the staffs of the William Newton Memorial and St. Mary's hospitals; died May 30, aged 63, of chronic bronchitis, emphysema, and pneumothorax.

Ryerson, Frank Leith ⊕ Detroit; Detroit College of Medicine, 1911; assistant professor of clinical ophthalmology at his alma mater, now known as the Wayne University College of Medicine; specialist certified by the American Board of Otolaryngology; an associate member of the American Medical Association; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; on the staffs of the Shurly and Evangelical Deaconess hospitals, Eloise (Mich.) Hospital and Infirmary, and the City of Detroit Receiving Hospital; died in Harper Hospital April 3, aged 68, of arteriosclerotic heart disease.

Abbott, William Pitt, Grand Marais, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1906; died May 18, aged 74.

Acker, James Milton, Aberdeen, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1910; past-president of the Mississippi State Medical Association; served overseas during World War I; at one time superintendent of the Mississippi State Hospital; died July 9, aged 67.

Bunsick, Philip ⊕ Brooklyn; University and Bellevue Hospital Medical College, New York City, 1923; on the staffs of Madison Park Hospital of Adelphi College and Shore Road Hospital; died May 15, aged 54, of cancer.

Dobson, Richard Allen ⊕ New York City; Meharry Medical College, Nashville, Tenn., 1909; formerly practiced in Sioux City, Iowa, where he was on the courtesy staff of the Methodist, St. Vincent's, and St. Joseph Mercy hospitals; died May 25, aged 72, of carcinoma of the prostate.

Fawcett, John Thomas ⊕ Grand Rapids, Mich.; University of Toronto Faculty of Medicine, Toronto, Canada, 1924; served during World Wars I and II; formerly practiced in Elyria, Ohio, where he was on the staff of the Elyria Memorial Hospital; died in the Blodgett Memorial Hospital June 20, aged 59, of arteriosclerotic heart disease.

Fletcher, Oscar Richard, Sanford, Va.; University of Maryland School of Medicine, Baltimore, 1908; member of the Medical Society of Virginia; served as a member and secretary of the county board of health; president of the board, National Hallwood Bank; on the staff of Northampton-Accomack Memorial Hospital, Nassawadox, where he died June 14, aged 72, of cerebral hemorrhage with left-sided hemiplegia.

Freeman, Ralph Waldo ⊕ Fillmore, Utah; University of Illinois College of Medicine, Chicago, 1934; served during World War II; city physician; on the staff of Fillmore Latter-Day Saints Hospital; died in Salt Lake City June 23, aged 50, of coronary arteriosclerosis.

Gaff, John Henry, Chicago; St. Louis College of Physicians and Surgeons, 1907; died April 9, aged 73, of peritonitis, appendicitis, and diabetes mellitus.

Granberry, Howard Baldwin Jr. ⊕ Austin, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1926; on the staff of the student health center of the University of Texas; a member of the state board of health, serving a term as its chairman; on the staffs of the Brackenridge Hospital and the Holy Cross Hospital, where he died June 15, aged 55, of myocardial infarction.

Greear, Clabe Baker ⊕ Honaker, Va.; State University of Iowa College of Medicine, Iowa City, 1902; twice president of the Russell County Medical Society; a past member of the county board of health, and a member of the medical examining board and volunteer medical service board in World War I; died May 29, aged 78, of coronary occlusion.

Grimes, Loring ⊕ Swampscott, Mass.; Harvard Medical School, Boston, 1904; past-president of the South Essex Medical Society; during World Wars I and II served as a member of the Selective Service Board; for many years chairman of the board of health; past-president of the Swampscott Rotary Club; at one time associate medical examiner of Essex County; served as chief of the surgical staff at the Lynn Hospital, where he died June 19, aged 74, of heart disease.

Hahn, LeRoy Walter ⊕ Berkeley, Calif.; University of California Medical School, San Francisco, 1928; also a graduate in dentistry; member of the American Academy of General Practice; on the staff of the Alta Bates Community Hospital; died July 10, aged 58, of cerebral vascular accident, arteriosclerosis, and diabetes mellitus.

Hampton, Aubrey Otis ⊕ Washington, D. C.; Baylor University College of Medicine, Dallas, Texas, 1925; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, of which he was at one time vice-president, the Radiological Society of North America, and the American College of Radiology; formerly on the faculty of Harvard Medical School in Boston; served during World War II; died July 17, aged 54.

Hands, Edgar Beach ⊕ Shreveport, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1903; an associate member of the American Medical Association; on the staffs of the North Louisiana and T. E. Schumpert Memorial sanitariums; formerly member of the board of directors of the Shreveport Charity Hospital; for many years company physician for the Shreveport division of the Pullman Company; died June 24, aged 81, of carcinoma of the colon with metastases to the liver.

Hanner, George William, Montoursville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1925; died June 12, aged 55, of duodenal ulcer with obstruction and arthritis.

Hare, Jessie Blanch Daniells, Los Angeles; University of Michigan Medical School, Ann Arbor, 1887; died June 26, aged 93, of arteriosclerotic heart disease.

Hellwig, John William ⊕ Omaha; Creighton University School of Medicine, Omaha, 1901; member of the American Urological Association; served on the faculty of his alma mater; died June 16, aged 79.

Hill, James Fitts ⊕ Montgomery, Ala.; Columbia University College of Physicians and Surgeons, New York City, 1911; owner of the Fitts Hill Hospital; for a long time chairman of the board of the Union Bank and Trust Company; died June 27, aged 66, of tuberculosis.

Hyde, Frederick Wirt ⊕ Detroit; Detroit College of Medicine and Surgery, 1914; on the staff of the Delray General Hospital; died July 3, aged 66, of carcinoma of the pancreas.

Jewell, Joe Pell ⊕ Piedmont, S. C.; Medical College of the State of South Carolina, Charleston, 1913; served during World War I; died June 18, aged 66.

Joyce, Thomas Bernard, Carmel, N. Y.; Cornell University Medical College, New York City, 1920; physician for the New York Department of Labor, Workman's Compensation Courts; died June 11, aged 63, of coronary thrombosis due to arteriosclerosis.

Kress, Lauretta Eby ⊕ Orlando, Fla.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1894; an associate member of the American Medical Association; died June 28, aged 91, of cerebral thrombosis.

Leininger, Elmer Clyde ⊕ Chicago; Northwestern University Medical School, Chicago, 1911; on the staffs of the Grant and Henrotin hospitals; died in the Woodlawn Hospital, Rochester, Ind., July 11, aged 68, of coronary disease.

Leslie, Walter Logan ⊕ Russellville, Mo.; Washington University School of Medicine, St. Louis, 1906; died June 18, aged 75.

McCarty, Hiram George, Cleveland; St. Louis University School of Medicine, 1913; member of the Cleveland Academy of Medicine; director of St. Mary's Orphanage; on the staff of St. Ann's Maternity Hospital; for many years on the staff of St. Alexis Hospital, where he died July 11, aged 71, of cardiac decompensation.

McKee, George Lashell ⊕ Burgettstown, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1902; served on the staffs of the South Side and Mercy hospitals in Pittsburgh; died June 12, aged 77, of carcinoma of the stomach.

Mileau, Alexander Jr. ⊕ Major, U. S. Army, retired, San Antonio, Texas; Tufts College Medical School, Boston, 1916; served during World War I; retired Sept. 30, 1934; died in Brooke Army Hospital in Fort Sam Houston July 4, aged 65, of arteriosclerotic heart disease.

Miller, Frank Edward ⊕ Curtice, Ohio; Ohio State University College of Medicine, Columbus, 1917; member of the American Academy of General Practice; served during World War I; on the staffs of St. Vincent's Hospital, St. Luke's Hospital, Riverside Hospital, and St. Charles Hospital in Toledo, where he died July 12, aged 66, of heart disease.

Miller, William Anthony ⊕ New York Mills, Minn.; Kansas City (Mo.) Medical College, 1896; member of the school board; served on the board of health and as deputy coroner; on the staff of St. James Hospital in Perham; member of the board of directors of the Farmers and Merchants State Bank, of which he was vice-president and president; died June 1, aged 82, of uremia.

Munson, Louis Manning, Chicago; Rush Medical College, Chicago, 1910; on the staff of the Alexian Brothers Hospital; died in Alexian Brothers Hospital, Oshkosh, Wis., July 3, aged 70, of pulmonary embolism, fracture of left hip, and hypertensive heart disease.

Murphy, William Joseph ⊕ Milwaukee; Milwaukee Medical College, 1909; served during World War I; for many years examining physician for the state boxing commission; at one time on the faculty of Marquette University School of Medicine; member of the American Academy of General Practice; on the staff of the Misericordia Hospital, where he died June 13, aged 69, of coronary thrombosis.

Nielsen, Louis Bernhard ⊕ Honesdale, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1903; an associate member of the American Medical Association; for many years health director of Wayne County; formerly registrar of vital statistics for Wayne County; served on the Wayne County Draft Board during World War I; on the staff of the Wayne County Memorial Hospital; died June 11, aged 74, of carcinoma of the prostate and subacute bacterial endocarditis.

Pinkstaff, James Taylor, St. Louis; Barnes Medical College, St. Louis, 1897; died in the Jewish Hospital June 15, aged 82, of cardiovascular accident and arteriosclerotic heart disease.

Roach, Thomas Nelson, Royse City, Texas; Baylor University College of Medicine, Dallas, 1905; died March 8, aged 80.

Senturia, Ben Druze ⊕ Chicago; Washington University School of Medicine, St. Louis, 1923; served during World War II; on the staff of the Veterans Administration Hospital; died July 18, aged 56, of coronary occlusion.

Seymour, James Henry, San Francisco; Cooper Medical College, San Francisco, 1892; died in the Hahnemann Hospital July 2, aged 85, of adenocarcinoma.

Sharkey, Mary Ellen, Chicago; Jenner Medical College, Chicago, 1908; died in the Bethany Hospital July 2, aged 79, of arteriosclerosis.

Smith, Earl Rutter, Albany, N. Y.; Long Island College Hospital, Brooklyn, 1898; died April 19, aged 81, of heart disease.

Smith, L. Lyne ⊕ Louisville, Ky.; Hospital College of Medicine, Louisville, 1903; an associate member of the American Medical Association; served during World War I; on the staffs of St. Anthony Hospital, SS. Mary and Elizabeth Hospital and St. Joseph Infirmary, where he was past-president of the medical staff and where he died June 3, aged 78, of arteriosclerotic heart disease.

Spring, Gardiner, Salisbury, Md.; University of the City of New York Medical Department, New York City, 1895; died in the Peninsula General Hospital June 21, aged 95, of arteriosclerosis.

Tomlinson, Charles Creighton ⊕ Omaha; University of Nebraska College of Medicine, Omaha, 1908; professor of dermatology and syphilology emeritus at his alma mater; member of the American Dermatological Association and the American Academy of Dermatology and Syphilology; specialist certified by the American Board of Dermatology and Syphilology; on the staffs of the Clarkson and Methodist hospitals; died July 1, aged 70.

Toothaker, Thomas J., Onaga, Kan.; University Medical College of Kansas City, Mo., 1907; died in Wamego June 14, aged 74, of cerebral hemorrhage.

Vastine, John Hursh ⊕ Shamokin, Pa.; College of Physicians and Surgeons, Baltimore, 1894; an associate member of the American Medical Association; died June 29, aged 85.

Vest, Cecil Woods ⊕ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1908; fellow of the American College of Surgeons; on the staffs of the Cambridge-Maryland Hospital in Cambridge, Church Home and Hospital, Union Memorial and West Baltimore General hospitals; served as a member of the board of trustees of the Grinnell (Iowa) College; died July 3, aged 73.

Vogel, Philip ⊕ San Francisco; Rush Medical College, Chicago, 1936; interned at the Franklin Hospital, where he served a residency; served during World War II; died in St. Mary's Hospital June 15, aged 44.

Wheeler, Herbert Edward, Spokane, Wash.; Rush Medical College, Chicago, 1908; member of the Washington State Medical Association; fellow of the American College of Surgeons; interned at St. Luke's Hospital in Chicago; served during World War I; for a short time in 1928 police surgeon; division surgeon for the Great Northern Railroad; member of the staff of Sacred Heart Hospital, St. Luke's Hospital, and the Deaconess Hospital, where he died June 23, aged 72, of myocardial infarction.

Wilhite, Lee Roy ⊕ Perkins, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1916; past-president of the Payne County Medical Society and vice-president of the Oklahoma Academy of General Practice; for many years member of the school board; served during World Wars I and II; vice-president of the Payne County Bank; on the staff of the Municipal Hospital in Stillwater; died July 9, aged 59, of arteriosclerosis.

Williams, Lee Viley, Nicholasville, Ky.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1904; member of the Kentucky State Medical Association; died in Lexington May 24, aged 75, of heart disease.

Yoder, Robert Donald ⊕ Pittsburgh; University of Pittsburgh School of Medicine, 1928; assistant clinical professor of medicine at his alma mater; specialist certified by the American Board of Internal Medicine; served during World War II; affiliated with the Veterans Administration Hospital, where he died June 16, aged 49, of coronary occlusion.

Zimmerman, Charles Leroy, Harrisburg, Pa.; Medico-Chirurgical College of Philadelphia, 1914; specialist certified by the American Board of Psychiatry and Neurology; at one time a physician in the Indian Service; formerly on the staff of the Danville (Pa.) Hospital; served on the medical staff of the Veterans Administration; at one time a medical examiner for the Pennsylvania and the Norfolk and Western railroads; died July 11, aged 66, of arteriosclerotic heart disease.

CORRECTION

Pendleton, Edward.—The obituary of Dr. Edward Pendleton (The Journal, June 25, 1955, page 682) was erroneous. The physician referred to was Dr. Edward W. Pendleton, a member of the American Medical Association and a resident of Grafton, W. Va., who graduated from Louisville (Ky.) Medical College in 1897 and died in the Veterans Administration Hospital in Roanoke, Va., April 1, aged 81, of intestinal obstruction.

FOREIGN LETTERS

AUSTRIA

Chronic Renal Insufficiency in Childhood.—At the meeting of the Society of Physicians in Vienna on May 6, Rupp and Swoboda reported on a girl, aged 7, with a high degree of growth deficiency and rachitic skeletal changes. The patient's serum revealed hyperphosphatemia, acidosis, and azotemia. Bilateral hydronephrosis was established as being the cause. Since the basic disease was beyond repair, symptomatic treatment of the azotemia, acidosis, and the rachitic disturbance of the bones was attempted. Despite the severity of the metabolic disturbance the use of intestinal irrigation, alkalization, and administration of calcium, vitamin B_6, and vitamin D_2 was successful in relieving symptoms. The disturbance of renal function that was also manifested by an isosthenuria concerning various electrolytes, however, remained unchanged.

Virus Hepatitis and Diabetes.—At the same meeting Königstein and Aichmair said that infectious hepatitis was found in 30.6% of 10,925 patients without, as compared to 8.6% of 4,992 patients with, diabetes mellitus. In epidemics of homologous serum jaundice, this disease was particularly common among patients with diabetes mellitus. The speakers emphasized the protracted course of hepatitis in diabetic patients, the large number of patients whose diabetes becomes worse in the course of hepatitis, and the possibility of a posthepatitic, nephrotic attack. When it was possible to omit parenteral therapy, it was omitted to reduce the risk of infectious hepatitis. Drug treatment consisted of administration of vitamins of group B, vitamin K, methionine, choline chloride, and occasionally desoxycorticosterone acetate and vitamin C. Parenteral therapy was practiced only in patients with liver insufficiency. In such patients, additional infusions of casein hydrolysates and duodenal irrigations proved effective. The diet was poor in fat, rich in protein, and the carbohydrate content was liberal.

Diagnosis of Cushing's Syndrome.—At the same meeting, Lachnit and Weis stated that differentiation between pituitary basophilism and adrenal cortical hyperfunction, the two types of Cushing's syndrome, is essential not only for theoretical reasons but also for the introduction of appropriate treatment. Resection of one and partial resection of the other adrenal for adrenal cortical hyperplasia is associated with the risk of early death or of late impairment that cannot be completely controlled by hormones. Determination of the corticotropin level in the plasma after adequate fractionation showed great variations, but it can be demonstrated in the spinal fluid using hypophysectomized rats as test animals. The fact that the spinal fluid, which is relatively poor in proteins, can be injected directly into the test animals is an advantage. If description of the methods used and tables giving a summary of patients studied are analyzed, it should be possible to differentiate between pituitary basophilism and adrenocortical hyperfunction.

Repository-Protoveratrine for Hypertension.—At the meeting of the Society of Physicians in Vienna on May 20, Dr. E. Hueber reported that he gave repository-protoveratrine by mouth to patients with advanced hypertension. These tablets make possible a slow, even absorption of the protoveratrine, by means of a specially prepared porous filter. With this new drug it is possible to keep patients with advanced hypertension free from complaints for a long time by giving them the drug once in the morning and occasionally in the evening, thus maintaining their blood pressure at decreased or even normal levels. The unpleasant side-effects of protoveratrine occur less frequently or may be completely absent when these repository tablets are used. It may be possible to give other substances, such as analgesics, hormones, and vitamins, in such tablets to obtain a repository effect, using them instead of injections or giving them once a day instead of two or three times daily.

Operation for Aortic Stenosis.—At the same meeting Heinert and Kaindl reported on a man, aged 33, who on March 22 was operated on successfully for aortic stenosis associated with severe calcification of the valves. The operation was performed transventricularly. The orifice of the aortic valve, which had been reduced to 3 mm. in diameter, was severed partly by sharp and partly by dull dissection. The subjective and objective results of the operation were satisfactory. Surgical valvulotomy is indicated chiefly in patients with progressive aortic stenosis that is characterized by the typical murmur, the missing second aortic sound, occasionally visible pulsation in the supraclavicular and suprasternal region, and lowered systolic pressure with reduced amplitude of the pulse. Such patients complain of abnormal fatigue, angina pectoris, palpitation, and attacks of dyspnea. The prognosis may be favorable when the involvement of the aortic valve is isolated, but a simultaneous mitral stenosis may be severed at the same operation. The administration of ganglion blocking agents for eight days in gradually reduced doses and, in addition, two to three daily injections of small amounts of strophanthin or of lanatoside C are recommended for after-treatment. Pleural effusion when it occurs must be aspirated cautiously.

Treatment of Chronic Ulcers with Trypsin.—At the same meeting, Dr. H. Bruck reported that a new approach has been tried in the treatment of chronic ulcers of the leg, because current methods require about four weeks before covering of the ulcer can even be attempted when a two stage procedure is used. With the use of a purified trypsin, cleaning of even a suppurative ulcer may be achieved within two to three days to such a degree that surgical treatment can be applied. After radical excision of the ulcer, its adjacent area, and its base and after a thorough hemostasis, the wound is exactly covered with small Thiersch's grafts about the size of postage stamps. Because of the smallness of the individual grafts, any hematoma that develops can easily drain and a complete take of the grafts is facilitated. Of the 32 patients treated by this method, the results were highly satisfactory in 28. A breakdown of the transplanted skin occurred in four patients, probably because the excision was not sufficiently radical.

Radioactive Iodine.—At the meeting of the Society of Physicians in Vienna on May 27, Dr. H. Vetter reported on a woman, aged 68, who suffered a spontaneous fracture of the shaft of the femur in September, 1953. In the course of nailing the fragments, a metastasis of thyroid carcinoma was found. After thyroidectomy the patient was given two doses, each of 100 mc., of radioactive iodine. In April, 1955, it was possible to remove the nail. Only a small proportion of patients with thyroid carcinomas can be successfully treated with radioactive iodine. In these patients, however, satisfactory results of long duration may be obtained. Roentgen treatment of carcinoma of the thyroid is indicated only after every attempt has failed to induce uptake of radioactive iodine by the cancer tissue.

Hormonal State and Multiple Sclerosis.—At the same meeting Birkmayer and his co-workers stated that, based on the observation that constitutionally manifest characteristics may accompany various types of evolution of multiple sclerosis, the excretion values of gonadotrophin, 17-ketosteroids, and estrin were determined in 24-hour samples of urine obtained from 71 patients with multiple sclerosis. The clinical course of the disease in the patients who showed deficient excretion of hormones with regard to their age and sex presented the following peculiarities: the duration of the disease was shorter than that in patients with normal excretion of hormones; the interval between the onset of the disease and the occurrence of complete paralysis was much shorter; and the number of patients who were not able to walk was significantly larger. The speakers concluded that a functionally normal hypophyseoadrenocortical axis causes a milder and longer course of multiple sclerosis and is associated

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The items in these letters are contributed by regular correspondents in the various foreign countries.

with less functional disintegration. In those patients in whom the work capacity of the hypophyseoadrenocortical axis is insufficient as a result of constitutional or additional stress factors, functional disintegration occurs more rapidly and to a greater extent. These observations suggest that substitution therapy with implantation of hypophysin and administration of Percorten (desoxycorticosterone trimethylacetate) and Cortiron (desoxycorticosterone acetate) may be effective.

Nerve Transplantation.—Dr. W. Hartenau, addressing the Society of Physicians of Vienna on June 3, said that in treating a traumatic defect of the facial nerve only the restoration of its functional capacity produces a good result. This can be accomplished by decompression of the nerve, suture, or free transplantation. The chorda tympani of a 13-year-old patient was destroyed for a distance of about 7 mm. at the time of a tympanoplastic operation. An intratemporal plastic repair was performed 12 hours later, and the missing piece was replaced by a transplant from the cutaneus femoris lateralis nerve. Under a magnifying glass, this piece was adapted to the freshened ends without suture and was fixed in a bone groove. Four months later active movements of the muscles supplied by the oral branch of the nerve began. At the time of speaking the oral branch functioned well, the ophthalmic branch showed less function, and the branch innervating the forehead showed no function, but further improvement was expected.

BRAZIL

End of Malaria in Federal District.—Dr. S. Ferreira Pinto of the National Department of Health (*Revista Brasileira de Malariologia*) reports that there were no cases of malaria in the Federal District in 1954. Between 1942 and 1947, the combat against the vectors, Anopheles tarsimaculatis and A. albitarsis, was aimed exclusively at their aquatic forms. It was an exacting and costly fight yielding slow results and little progress, although, at the end of the sixth year of the campaign—in 1947—a reduction of about 60% in the incidence of the disease was noted. From 1948 on, when a single annual spraying of houses with chlorophenothane (DDT) was begun, a more rapid reduction occurred. In order to obtain the complete eradication of malaria in the Federal District and knowing that the seasonal period of transmission of the disease in the region lasts seven or eight months, beginning in 1952, two annual cycles of spraying were made. In that year, only seven cases of malaria were reported, followed by three in 1953 and none in 1954. According to the concept of malaria eradication set forth by the World Health Organization, three years without transmission of the disease are required before an endemic area is considered free from malaria. The author believes that, with the continued use of the measures described, the situation will be maintained for several more years.

Urinary Sediment.—Dr. A. V. Rotondi of São Paulo reported to the Associação Paulista de Medicina that in all of a series of 50 normal young men the quantitative urinary sediment showed red blood cells varying in number between 166 and 1,277 per ml. of urine. Hyaline and hyalogranular casts were found in 22%, varying between 0 and 14.7 per ml. of urine. In the subjects showing cylindruria, a determination of the glomerular filtrate by clearance of the endogenous creatinine showed normal values in all cases. The diet prescribed for the study of quantitative urinary sediment aimed at producing urine with a pH lower than 7 and a specific gravity of 1.024 or more—an important feature not only for the protection of the red blood cells but also for the evaluation of the facultative distal tubular capacity of urine concentration.

Antigen for Diagnosis of American Trypanosomiasis.—Dr. Victor Nussenzveig of São Paulo reported to the Associação Paulista de Medicina on a new antigen for the complement fixation test in American trypanosomiasis. The antigen described by Freitas and Almeida in 1949, now currently used for the diagnosis of American trypanosomiasis, is satisfactorily sensitive and specific, but its exact dose is difficult to determine for the quantitative technique, since it consists of a suspension of particles of varying dimensions. The author has made a new soluble antigen from Trypanosoma cruzi that possesses a good fixation power in mixtures with serums from diseased patients and that is not anticomplementary in the dilution to be used for the test.

ENGLAND

Public Health and Preventive Medicine.—The annual health congress of the Royal Sanitary Institute was held at Bournemouth in April. Prof. R. H. Parry of Bristol urged closer collaboration between the medical teaching centers and the public health departments so that medical students could learn more about conditions in the home, at school, and in the factory. A closer rapport between the general practitioner was needed so that he could assume medical responsibility at the health clinics and lessen the burden of the full-time health officers. Prof. Thomas McKeown of Birmingham said that, although prevention was better than cure, in National Health Service planning far too much effort had been put into curing established disease and insufficient effort put into its prevention. The improved health of today compared with that of previous generations is due primarily to the fact that much illness is preventable, rather than to improved methods of treatment. Dr. J. Brotherston of the London School of Hygiene and Tropical Medicine considered that the biggest problem facing the health service today was the care of the elderly sick. Efficient diagnosis and treatment are necessary to ease the strain on hospital beds and the country's finances, and prevention is important because it permits the aged to retain their independence. The hospital outpatient department must play an increasing part in the treatment of the elderly to relieve the pressure on hospital beds. The general practitioner must always bear the main burden of looking after old persons in their homes, where they should be able to get the benefit of ancillary services. There is no reason why the services of the physiotherapist, dietitian, social worker, and specialist should not be available in the home.

In the symposium on noise at work Air Vice-Marshal E. D. Dickson said that, in occupations associated with continual exposure to loud noise, impairment of hearing would result but, as in the early stages the impairment was in the appreciation of the higher frequencies, it was not always obvious. Intense noise injures the organ of Corti, the primary lesion being the destruction of the outer hair cells. A sudden loud sound may cause immediate destruction, but a continuous noise may cause a gradual change. Acoustic trauma occurs when the intensity of the noise is above 90 db. Auditory acuity should be determined before employment, so that compensation claims for impairment of hearing resulting from occupation can be properly evaluated. Furthermore some degree of deafness must be expected with advancing years. Proper planning and layout in factories helps to prevent excessive noise. T. S. Littler said that, although ear plugs reduce the appreciation of noise, there is a limit to the extent to which they do this, because sound vibrations are transmitted through the cartilage of the meatus and the bones of the skull to the ear. D. E. Broadbent of the Applied Psychology Unit, Cambridge, said that there was no evidence that excessive noise produced any impairment in mental health or behavior. Noise does, however, cause brief shifts of attention from the work in hand.

Aspirin and Peptic Ulcer.—Muir and Cossar have investigated the harmful effects of aspirin on the stomach, particularly in patients with peptic ulcer (*Brit. M. J.* 2:7, 1955). They administered 0.6 gm. of aspirin to 20 patients with radiologically confirmed peptic ulcers, after aspiration of the fasting gastric juice during a fractional test meal. The aspirin increased gastric acidity, and, in six of the patients, the specimens of gastric juice were blood-stained. The blood found in the aspirin test meals was in the form of blood-stained mucus and clots of altered blood, in contrast to blood of traumatic origin, which is fresh and bright red. A further point of interest was the conversion by aspirin of a previously consistently negative test for fecal occult blood to a strongly positive one in three patients. To study the effect of aspirin on the stomach, two uncrushed 0.3 gm. commercial aspirin tablets were given with a little water to 20 patients with peptic ulcer two hours before gastrectomy; another 20 had hard aspirin tablets; and another 20 had soluble calcium aspirin. Examination of the stomachs after removal showed the presence of macroscopic mucosal irritation in 12 of the 20 stomachs of patients treated with commercial aspirin. In three the irritation was severe. Microscopically the findings were typical of acute erosive gastritis. Of the 20 patients who received hard aspirin tablets, 8 showed typical acute erosive gastritis, 5 of them moderately severe. In only 2 of the 20 patients receiving soluble calcium aspirin was there any sign of mucosal irritation, and in these it was mild. The erosions were obviously the result of the local irritant action of the aspirin, since they often took the shape of the aspirin granule and remained in situ. In some cases the aspirin tablet was found embedded in the gastric mucosa.

About 300 people, representing an average cross section of the community, were questioned on their intolerance to aspirin. About 1 in 20 said that it gave them pyrosis, nausea, and, occasionally, epigastric discomfort. A series of 318 patients with peptic ulcer were questioned on their intolerance to aspirin; 25% associated a recurrence of symptoms with the taking of aspirin. In seven years 15 patients with severe dyspepsia were seen who were habitual aspirin takers and who were cured of their dyspepsia by its withdrawal. A most surprising result of the investigation was the fact that 33% of the patients admitted taking aspirin a few hours before a hematemesis. The authors state that there is also an "aspirin hematemesis" that occurs without a previous history of dyspepsia. They believe that, in patients with peptic ulcer who take aspirin, hematemesis results from an acute erosive gastritis induced by the drug. There was no evidence of defective blood coagulation or changed prothrombin time, thus excluding a salicylate-induced hemorrhagic diathesis as a cause of gastric bleeding. The authors recommend that aspirin should never be given to patients with peptic ulcer or dyspepsia.

Poliomyelitis and Tonsillectomy.—In 1951 the Medical Research Council appointed a committee to investigate the association between poliomyelitis and tonsillectomy, and its findings were published in *Lancet* (2:5, 1955). Since 1951 all health officers in England and Wales have submitted to the committee a routine report on each person in their areas said to be suffering from poliomyelitis. The reports showed whether the patients had undergone tonsillectomy within 12 months before the onset of symptoms. Patients reported to have had their tonsils removed within three months before the onset of poliomyelitis were selected for special investigation. A medical investigator visited the patients, the health officer, and the physician in charge of each case, and he then made a detailed record. A total of 114 such patients was reported on over a period of three years, and complete reports were obtained of 103 children up to 18 years of age who developed poliomyelitis within 91 days of tonsillectomy; 59% had symptoms 1 to 21 days after tonsillectomy. In the bulbar and bulbospinal groups the infection occurred 1 to 21 days after operation in 79% as compared with 38% of those in the spinal group and 31% in the nonparalytic group. Most of the cases occurred in the principal epidemic period, but a similar pattern was seen in nonepidemic periods. The committee concluded that tonsillectomy as practiced today adds only a few cases to the total number; however, although small as a community problem, for the patient who has undergone tonsillectomy it is important. The practice of restricting tonsillectomy in late summer, early autumn, or when poliomyelitis is rampant may diminish the number of postoperative cases; however, even if tonsils are removed only in the first six months of the year, the risk of developing bulbar poliomyelitis soon after the operation is still present. Records were also obtained of patients with a history of tonsillectomy at any time before the onset of paralytic poliomyelitis, and histories were obtained for matched controls. In a 5 to 15 year series of 203 patients, 35% had undergone tonsillectomy as compared with 22% of the controls. Percentage differences between patients and the controls were greatest in the group with bulbar paralysis, intermediate in the group with bulbospinal paralysis, and least in the group with spinal paralysis. The results indicated that persons who had had a tonsillectomy were more likely to develop the bulbar form of poliomyelitis than those who had not, even if years had elapsed between the removal of the tonsils and the onset of poliomyelitis.

Medicine and the General Election.—A general election was held on May 26. Both the Conservative and Labour (socialist) parties stressed health measures in their electioneering. The Conservative claim states that new hospital building was completely neglected by the last socialist government. Plans are now being made by the Conservative government to build new hospitals and to extend and modernize many existing ones. Worn out and obsolete equipment will be replaced and new beds provided. Stress will be placed on preventive medicine. "These are our priorities," say the Conservatives, "We rank them higher than free wigs or free aspirins." The party will encourage private practice and contributory health schemes, outside the health service, and will provide beds for paying patients in hospitals. The socialists oppose this. The Conservative party will also consider the problem of the aged and suggest schemes for their assistance when sick or infirm. It says that it is anxious to provide the best National Health Service the nation can afford. It has set up the Guillebaud Committee to study the problems involved. The party will make sure that adequate funds are available for medical research. It will do all in its power to further a national "clean air" policy.

The Labour party, if elected, will abolish all charges within the health service, including those for prescriptions, artificial teeth, and spectacles. It will also abolish all private pay beds in hospitals (but fails to mention that Labour politicians pay for medical treatment abroad by Continental specialists). Social security is to be carried a stage further with the institution of a Ministry of Social Welfare. The Labour party also promises to enforce clean food standards in shops and restaurants and to bring water supplies under public ownership.

Leukemia and Irradiation.—Brown and Abbatt have investigated the death rate from leukemia among patients with ankylosing spondylitis treated with roentgen rays (*Lancet* 1:1283, 1955). Preliminary data have been collected on 9,364 patients treated in 37 centers from 1940 to 1954. The expected number of deaths from leukemia in the series was calculated on the basis of the known death rates from leukemia in England and Wales for 1953. The observed deaths from leukemia among patients with ankylosing spondylitis were found to be at least 5 times and possibly as many as 10 times the expected number of such deaths. Among those patients given more than one course of irradiation the observed deaths were at least nine times those expected to occur from the ordinary mortality statistics. One explanation is that patients with ankylosing spondylitis may be unusually susceptible to the development of leukemia, but, in reviewing the findings in the light of reports in the medical literature and in the increased rate among patients who have had several exposures, it would seem that leukemia in most of these patients is associated with irradiation. An increase has occurred in the death rates from leukemia in both Nagasaki and Hiroshima, attributable to the atomic explosions over those cities in 1945. Other explanations for the high incidence of leukemia in these patients are, however, possible, and further investigations are necessary to confirm the findings. In the meantime, the authors consider that it would be wrong to withhold irradiation from those suffering from ankylosing spondylitis. What is certain, however, is that no one should be treated by irradiation until the diagnosis is clearly established and that a second course should not be given unless absolutely necessary.

Beryllium Poisoning.—A 22-year-old woman sued the Mullard Research Laboratories claiming that through their neglect she contracted beryllosis. This was the first action of its kind brought in the English courts. From July to September, 1947, she worked on an experimental process for producing fluorescent lighting tubes, which involved working with beryllium oxide and zinc beryllium silicate. She left in October, 1947, in good health but a year later was found to be suffering from chronic beryllosis, as a result of which, it was claimed, she would be a permanent invalid. It was held that her employers knew, or should have known, that beryllium was highly toxic. In defense the employers claimed that at the time they did not know the toxic hazards associated with the handling of beryllium compounds. The judge dismissed the plaintiff's claim stating that he was not satisfied that the employers should have known the process was dangerous at the time. The plaintiff appealed, but the Court of Appeal dismissed the case, one of the lords of the Court of Appeal dissenting. Lord Justice Denning said that the company concerned had decided to make their own fluorescent beryllium powders. If they had searched the literature they would have found articles in their own library (*American Chemical Abstracts*, Nov., 1946, and the *British Medical Journal*, Oct., 1943) stating that beryllium compounds were dangerous. They should have asked their medical officer to study the problem. He would have reported, as he did in giving evidence, that he knew that beryllium was toxic; however, the employers did not discover its dangerous nature until after 1947. The other lords of the Court of Appeal held that information on the toxicology of the substance was meager until after 1947.

Salaries in Public Health.—It is four and a half years since the salaries of physicians in the public health service were raised. The Ministry of Health has resisted any increase since that date, although the arguments in favor of it have been overwhelming. For example, physicians in the National Health Service in general practice and in the hospital service had salary increases in 1952 and 1954. The Whitley Council Committee recently failed to agree on the amounts by which public health salaries should be increased. The matter was therefore referred to arbitration to the Industrial Court for a decision. The physicians urged the court to equate salaries with those paid to doctors in other branches of the health service. On the other hand, the public health authorities, while agreeing to a salary revision, considered that physicians should not be paid any more than professional persons of comparable status in local government employment. The Industrial Court has sided with the public health authorities. There has been some disappointment over the new salary scales, because physicians employed in the public health service have long believed that for highly trained professional people they were underpaid. The new salaries for health officers represent an increase of about 10%. The commencing salary for a health officer in the smallest population groups (75,000 persons) is now $4,550, rising to $5,124 a year, and in the largest population group (600,000 persons) it is $7,000, rising to $8,120 a year.

The Fear of Cancer and Smoking.—Dr. Pyke of the Radcliffe Infirmary, Oxford, has conducted a survey of the 217 physicians working in Oxford hospitals. He found that 47.4% smoked and 27.5% had never smoked. These figures are lower than those for the general population. The percent who had never smoked agrees closely with Doll and Hill's finding of 28.5% nonsmokers among male physicians aged 35 to 44. In the group of physicians questioned by Dr. Pyke, the number who smoke is gradually declining. Eight years ago it was 61%, now it is 47.4%. The main reason given for the decline in smoking by the physicians was the high cost of cigarettes and not the risk of cancer, although this may have been a deterrent to starting the habit. This is supported by the fact that the number of physicians giving up smoking since an association with bronchial carcinoma was discovered has not increased. Only 56.5% of the physicians were satisfied with the evidence linking carcinoma of the lung and smoking. The proportion of those who accepted the evidence of an association between smoking and carcinoma of the lung was so much higher—five times—among the nonsmokers than among the smokers, present and past, that personal prejudice may have played a part in forming these opinions. The pleasures of tobacco addiction may have persuaded some of the smokers to discount the evidence of its dangers.

Death During Electroconvulsive Treatment.—At an inquest on a patient who died during electroconvulsive treatment, the North Bedfordshire coroner made the statement: "I hope that I will not have to consider any case in the future in which there is therapy involving loss of consciousness and cessation of breathing, however short, on the part of the patient, where only one doctor is present to administer the therapy and look after the patient in an unconscious state." The patient had undergone a pulmonary operation and subsequently suffered from acute melancholia. He was admitted to hospital, where he was given modified electroconvulsive therapy by a resident aided by nurses. The psychiatrist at the hospital, who had originated the form of therapy used, said that 4,000 to 5,000 treatments were given each year at the hospital without any mishap and that it would be impossible to have a trained anesthetist present whenever such treatment was given. The coroner suggested that in a case like this, where the patient had had a pulmonary operation, a second physician should have been present to give controlled respiration. He concluded that the patient had died from spontaneous pneumothorax and chronic pulmonary tuberculosis by misadventure after electroconvulsive therapy.

Death from Chloramphenicol.—Death following the administration of chloramphenicol was the subject of an inquest at Hammersmith, London. A 5-year-old girl had bronchitis in April, 1954, and the family physician prescribed "a teaspoonful of chloramphenicol three times a day." This presumably referred to an elixir of chloramphenicol palmitate, which was given to the child for three days. The bronchitis cleared up rapidly. On Nov. 24 the child was again brought to the physician with a rash on her face and legs and enlarged tonsils. At the time the symptoms were not associated with the administration of chloramphenicol. Later a blood cell count was taken, and on Dec. 1 the child was admitted to the Victoria Hospital for Children, Chelsea, with a diagnosis of aplastic anemia. Blood transfusions were given for several months but the child died on March 3, 1955. An autopsy confirmed the diagnosis of aplastic anemia. The pathologist thought that the condition resulted from the administration of chloramphenicol. It was, however, a rare complication, and he did not think that a physician could forecast the condition. Blood cell counts were not practicable for every patient taking chloramphenicol, and aplastic anemia often came on suddenly. The coroner recorded a verdict of death from misadventure.

Acetazolamide for Glaucoma.—The 75th congress of the Ophthalmological Society of the United Kingdom held in London in April included a symposium on acetazolamide. This has been used as an inhibitor of carbonic anhydrase, and because of its diuretic effect it has been used in the treatment of congestive heart failure. E. S. Perkins described the use of the drug at Moorfields Eye Hospital, where 58 patients with glaucoma had been treated with it. In about half the cases, which included congestive glaucoma, simple glaucoma, and glaucoma secondary to iritis and trauma, the intraocular tension was well controlled. In half of the remainder it was partially controlled or reduced for part of the time. The effect of the drug was increased by miotics. The dosage used was 500 mg. initially, followed by 250 mg. every six hours, and reduced after a few days to two or three times a day. The side-effects were diuresis and paresthesia. Acetazolamide was of particular value in the control of acute congestive glaucomatous crises, in simple glaucoma that failed to respond to miotics, and in iritic glaucoma in which intraocular tension could not be controlled until the underlying iritis had been allayed.

Fall from a Litter.—Just before midnight on March 17, 1953, an 86-year-old woman was admitted to a hospital for observation. She was placed on a wheeled litter, 2 ft. wide and 2 ft. 6 in. high, which had no guard rails, and wheeled into a cubicle. She was left unattended and fell off the litter, breaking her thigh. She sued the hospital for damages, alleging negligence. The evidence was that the patient had been left for five minutes, although her physician admitted that he was still in the room. The attending nurse said that the patient's condition was such that she did not require constant attention and that she had left the patient for 30 seconds to answer the telephone. Lord Uvedale testified that in his hospital there was one attendant per litter, night and day, and that in his opinion it was unwise and a mistake to leave a patient alone on a litter. After the fall the patient was in the hospital for nine months and had to have a pin inserted in her femur. The judge said that it was the duty of the hospital staff to take all reasonable care. The jury found for the plaintiff, awarded damages of $280, and added that someone should attend at all times a patient on a litter, if the litter has no guard rails.

PAINLESS MYOCARDIAL INFARCTION IN PSYCHOTIC PATIENTS

To the Editor:—Medical teaching stresses the central role of pain in the symptom complex preceding myocardial infarction. Dr. H. Zobel, psychiatrist in charge of the chronic service at this hospital, states that all psychiatrists have observed patients suffering from an acute surgical abdomen, ruptured gastric ulcer with peritonitis, gallbladder or renal colic, and coronary occlusion, with little or no subjective complaint of pain. This high pain threshold has been ascribed to many causes, none of them conclusive. The psychological mechanism is a complete withdrawal from reality and pain. Indian fakirs who are able to walk over red-hot coals with bare feet furnish an example of self-hypnosis rather than withdrawal. There is also the familiar case of the soldier so intensely excited during combat as to be oblivious of having been wounded until he sees his blood running or is unable to move further because of a shattered leg. Persons may be hypnotized into a trance and told they will not feel pain. On being awakened they submit to pin pricks without flinching and state that there is no pain sensation present. Hysterical anesthesia is likewise a familiar phenomenon. W. E. Marchand (*Bedford Research*, vol. 4, 1953; *New England J. Med.* 253:51, 1955) has collected a series of 99 psychotic patients in whom a diagnosis of myocardial infarction was made. In 83 the diagnosis was confirmed by autopsy or electrocardiogram. Of these, 51 met criteria for being considered acute. Chest pain was present in only seven of these. If the 32 chronic cases are added only 7 of the 83 patients had pain as a presenting symptom. Marchand also observed that four patients had a diagnosis of acute infarction because of a change in their psychotic behavior. He compares the psychotic with a normal patient who had a lobotomy for relief of pain in that to such a patient meaning of pain is lost. At our hospital in the last two years, a new diagnosis of coronary thrombosis was made on 56 inpatients and seven nonpsychotic admissions. Of the latter only one died (after only 12 hours in hospital), and all seven had typical pain as the presenting symptom. Of the 56 inpatients the diagnosis was confirmed at autopsy in 21 and by unequivocal electrocardiographic tracings in the rest. Only seven of these noted any pain, and only three had pain as the presenting symptom. Thirty-one deaths in 56 patients gives a mortality of 55%. The usual expected hospital death rate is about 25%. As our hospital population averages about 2,500, this made us suspect there were in the wards 30 to 50 patients with relatively recent infarctions that had given no symptoms and were, therefore, unsuspected. We have started an intensive electrocardiographic survey of all patients over 35 years of age. We have already indications that the final number of cases so picked up will be higher than the expected projection curve.

In July, 1953, and August, 1954, one 57-year-old patient had a normal electrocardiogram, although benign hypertension was present. He was markedly delusional but cooperative. On Feb. 25, 1955, he was seen by the psychiatrist because an aide observed him to be "extremely quiet." At that time his blood pressure was 155/85 mm. Hg, and he had no complaints of any sort. He was satisfied to work in the clothing room. An electrocardiogram revealed evidence of a massive, anterolateral infarct. The patient made an uneventful recovery. On March 3 his leukocyte count was 13,600 per cubic millimeter and his sedimentation rate was 75. His rectal temperature never exceeded 100.6 F. A 63-year-old patient, while in the dining room, was observed by an aide to become pale and stop eating. He was transferred to the medical ward. The first electrocardiogram was normal. His physical examination was completely unrevealing. He was nevertheless kept for observation, and two days later an electrocardiogram revealed evidences of a massive anterior infarct that proceeded to go through the usual evolutionary pattern. Throughout the course of this attack the patient was comfortable and had no complaints. The most important observation to be made from the above is our complete agreement with Marchand's conclusion that we have to depend on the alertness of psychiatric aides who live with patients from day to day to call attention to any change whatever in the behavior of the patients in their charge. Psychotic patients simply do not verbalize what should be severe pain. It is not that they are inured to sensation but that their withdrawal prevents the pain from penetrating to their consciousness. It is of the greatest practical importance for all physicians to recognize this phenomenon. In making a diagnosis when examining a known or even suspected psychotic this absence of pain must be taken into account. Whenever the condition objectively points to a coronary occlusion, ruptured peptic ulcer, biliary or renal colic, or any other usually painful disease, the lack of pain must not deter one from making the proper diagnosis and instituting appropriate therapy. Many organic ailments of psychotic patients go untreated because they are undiagnosed.

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STUDYING THE PATIENT

To the Editor:—As a psychiatrist and psychoanalyst who presumably would be classified as an "orthodox Freudian," I would like to make a few comments on Dr. John D. Campbell's article "Manic Depressive Disease in Children" in The Journal, May 21, 1955, page 154. In his concluding paragraph, he states that patients should be studied as if the physician were the original observer, and warns against stereotyped formulations. I heartily concur with these sentiments and feel this attitude should always prevail. However, in the description of etiological factors attributed to the so-called psychodynamic school, he calls attention only to environmental factors such as parents, cultural and social setting, and trauma. These can be very important undoubtedly. Yet, if this were all the "psychodynamic school" had to say, I would join Dr. Campbell in his criticism and underline his statement to consider the possibility of illness within the child himself. Dr. Campbell fails to mention the very group of factors that psychoanalysts have stressed as basic in the cause of psychological illness. For brevity we can refer to this group as initiating in the instinctual drives and subsequently developing psychic conflicts. According to psychoanalytical theory these basic drives are biological and form the substrata for mental life. They are the motivating force for healthy development as well as mental suffering. No treatment is adequate that fails to acknowledge their etiological role. To think of neurotic disease and affectual disorders as predominantly due to environmental factors is a serious distortion of basic psychoanalytical principles. Freud's work focussed initially on precipitating factors in neuroses of adults, and his early formulations suggested traumatic factors in childhood (e. g., seductions). In 1897 he wrote to W. Fliess that his theory was wrong (*The Origins of Psychoanalysis: Letters to Wilhelm Fliess, Drafts and Notes: 1887-1902*, edited by Marie Bonaparte and others, translated by Eric Mosbacher and James Strachey, New York, Basic Books, Inc., 1954, letter 69, p. 215). In a paper "Sexuality in the Neuroses," written in 1905 (Collected Papers, London, Hogarth Press, Ltd., 1948, vol. 1, pp. 276-277) he corrects the traumatic theory, calling it erroneous in the majority of cases. In his Introductory Lectures of 1915-1917 (A General Introduction to Psychoanalysis, translated by Joan Riviere, Garden City, N. Y., Garden City Publishing Company, Inc., 1943, p. 322) he states that such recollections need be only psychically real (i. e., real in the person's mind) to be of significance in the developing conflict, as the unconscious does not differentiate psychic reality from outer reality. The pendulum often tends to overswing. The "psychodynamic principles" of Freudian analysis appear to have been greeted with great enthusiasm by the public. Yet it was a cause of great concern at the International Psychoanalytical Congress of 1951, in Amsterdam, Netherlands, that the present-day understanding of such principles appeared to be creating a generation of guilty parents rather than a healthy mental life for children and parents. This could be due to a misconception similar to the one Dr. Campbell's article suggested. We do not belittle constitutional factors. They are the basis for mental functioning. It is through the study of how the person has coped with his instinctual drives that therapy proceeds. In the process, better solutions are often found and outmoded methods discarded. Simultaneously psychoanalysis learns more about the nature of endopsychic conflicts.

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GOVERNMENT SERVICES

NAVY

Medical Reserve Courses.—A six day seminar for commanding officers of Naval Reserve medical companies will convene in the bureau of medicine and surgery, Navy Department, Washington, D. C., on Oct. 31. All naval districts have been assigned a quota for this seminar. A 14 day course of on-the-job training in submarine medicine will be conducted by the Naval Medical Research Laboratory, Submarine Base, New London, Conn., commencing on the first Monday in August and November, 1955, and February and May, 1956. Quotas for reserve officers of the Medical Corps and Medical Service Corps only have been assigned to the first, third, fourth, fifth, sixth, eighth, and ninth naval districts. A 14 day course of on-the-job training in medical research is offered at the Aviation Medical Acceleration Laboratory, Naval Air Development Center, Johnsville, Pa., July 4-17, July 18-31, Aug. 1-14, Aug. 15-28, and Aug. 29 to Sept. 11, 1955. Quotas have been assigned to the first, third, fourth, fifth, and ninth naval districts. Medical ensigns (1995) who have successfully completed the first year of medical school and who are interested in medical research and development are eligible for this training. A five day course in special weapons, isotopes, and military medicine will be given at the Naval Station, Treasure Island, Calif., starting Feb. 27, 1956. Quotas have been assigned to the 11th, 12th, and 13th naval districts. For further information on these and other training opportunities send inquiries to the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

New Rear Admirals.—The President, on Aug. 1, 1955, approved the report of the Selection Board, which recommended the following named medical officers for temporary promotion to the grade of rear admiral in the Medical Corps: Capt. Courtney G. Clegg, commanding officer, U. S. Naval Hospital, Philadelphia; Capt. Hubert J. Van Peenen, staff medical officer; and Capt. Thomas G. Hays, commanding officer, U. S. Naval Hospital, Mare Island, Calif.

Personal.—The following officers of the medical department have been placed on the retired list effective July 1: Rear Adm. Clifford A. Swanson and Capt. Hugo O. G. Wagner on the temporary disability retired list; Rear Adm. Eugene R. Hering Jr., Capt. Lewis T. Dorgan, Capt. Thomas Q. Harbour, and Capt. Charles W. Shilling on the retired list.——Dr. Howard T. Karsner, research advisor to the surgeon general, has been appointed as the general consultant of the medical advisory board of the Leonard Wood Memorial (American Leprosy Foundation).——Lieut. John G. Gordon, M. C., U. S. N. R., now on duty under instruction at the Naval School of Aviation Medicine, Pensacola, Fla., will become the Navy's first "resident" in aviation medicine at the school upon completion of the basic course in aviation medicine in September.

PUBLIC HEALTH SERVICE

Committee Appointed to Review Research Programs.—A special committee on medical research has been named by the National Science Board to review and evaluate the medical research programs of the Department of Health, Education, and Welfare, at whose request the review is being made. The committee is headed by Dr. C. N. H. Long, chairman, department of physiology, Yale University School of Medicine. Other members are: Dr. E. A. Doisy, professor of biochemistry, St. Louis University School of Medicine; Dr. Ernest W. Goodpasture, Armed Forces Institute of Pathology, Walter Reed Army Medical Center; Dr. A. B. Hastings, department of biological chemistry, Harvard Medical School; Dr. Charles Huggins, director, the Ben May Laboratory for Cancer Research, University of Chicago; Dr. Colin M. MacLeod, department of microbiology, New York University School of Medicine; Dr. C. Phillip Miller, department of medicine, University of Chicago; and Dr. W. M. Stanley, director, virus laboratory, University of California. Dr. Joseph W. Pisani, assistant dean, State University College of Medicine at New York City, is serving as executive secretary of the committee.

In the department's request to the foundation the secretary requested that review of the department's program include the following: consideration of the rate of growth of the programs of the National Institutes of Health, other research units of the Public Health Service, and other units of the department, in the light of the responsibilities of the federal government with respect to health, medical, and related research; general appraisal of the present level of support of medical research by the department; careful consideration of the proper balance of effort with respect to the support of basic research and research aimed more directly at the prevention, diagnosis, care, and cure of diseases; and appraisal of the relative distribution of effort among the major special fields of health research.

Regular Corps Examinations for Medical Officers.—A competitive examination for appointment of medical officers to the regular corps of the U. S. Public Health Service will be held in various places throughout the country on Nov. 15-17, 1955. Appointments provide opportunities for career service in clinical medicine, research, and public health. They will be made in the ranks of assistant and senior assistant, equivalent to Navy ranks of lieutenant (j. g.) and lieutenant respectively. Entrance pay for an assistant surgeon with dependents is $6,017 per annum; for senior assistant surgeon with dependents, $6,918. Provisions are made for promotions at regular intervals. Benefits include periodic pay increases, 30 days of annual leave, sick leave, medical care, disability retirement pay, retirement pay, which is three-fourths of annual basic pay at time of retirement, and other privileges.

Active duty as a Public Health Service officer fulfills the obligation of Selective Service. Requirements for both ranks are U. S. citizenship, age of at least 21 years, and graduation from a recognized school of medicine. For the rank of assistant surgeon, at least 7 years of collegiate and professional training and appropriate experience are needed, and, for senior assistant surgeon, at least 10 years of collegiate and professional training and appropriate experience are needed. Entrance examinations will include an oral interview, physical examination, and comprehensive objective examinations in the professional field. Application forms may be obtained from the Chief, Division of Personnel, Public Health Service, Washington 25, D. C. Completed application forms must be received in the Division of Personnel no later than Oct. 15, 1955.

Course on Serology of Syphilis.—Nine laboratory refresher courses on the serology of syphilis and tests for syphilis using the Treponema pallidum will be offered at the Venereal Disease Research Laboratory in Chamblee, Ga., from September, 1955, through May, 1956, the Public Health Service's venereal disease program announces. The schedule of courses is as follows:

Sept. 26-Oct. 7, 1955, Serology of Syphilis.
Oct. 24-Nov. 4, 1955, Serology of Syphilis.
Oct. 31-Nov. 10, 1955, Tests for Syphilis Using the Treponema Pallidum.
Jan. 9-20, 1956, Serology of Syphilis.
Feb. 6-17, 1956, Serology of Syphilis.
March 12-23, 1956, Serology of Syphilis.
April 2-13, 1956, Serology of Syphilis.
April 16-27, 1956, Tests for Syphilis Using the Treponema Pallidum.
April 30-May 11, 1956, Management and Control of Syphilis Serology by the Regional Laboratory.

The Serology of Syphilis courses are designed to provide refresher training to senior operating personnel of state and Public Health Service laboratories. Applications must be signed by the state health officer or state laboratory director unless the applicant is an employee of the Public Health Service. In such instances application must be approved by the medical officer in charge. Application blanks may be obtained from the address below. Correspondence about these courses should be addressed to: Director, Venereal Disease Research Laboratory, Division of Special Health Services, Public Health Service, P. O. Box 185, Chamblee, Ga.

BUREAU OF MEDICAL ECONOMIC RESEARCH

THE MAGNUM OPUS OF MICHAEL DAVIS

Frank G. Dickinson, Ph.D.

Michael Davis' most recent book, "Medical Care for Tomorrow" (New York, Harper & Brothers, 1955), is a well-organized compilation of the efforts of a lifetime to persuade the American people to accept socialized medicine. His earlier writings on this subject have been voluminous, and this book definitely establishes Michael M. Davis as the most diligent and, from many points of view, the ablest advocate of the socialization of the practice of medicine. A full-scale review covering every chapter would be another volume. We shall merely try to present the flavor of this book.

The approach taken in the volume is set forth in the preface (ix): "I am of course aware that a number of physicians are not accustomed to economic and social analysis. . . ." As early as page 18 one wonders if Davis is competent to present an economic and social analysis for physicians or anyone else. He gives as the "rates of increase," 1929-1950, drawn from Department of Commerce consumer expenditure reports: medical care, 2.75 times; tobacco, 2.6 times. The correct increases were only 1.82 and 1.60—that is, increases of 182% and 160%. Apparently he does not know the difference between a ratio, an increase, and a rate of increase. In the text he refers to the period 1929 to 1950 but states in the footnote the "rate of increase" for alcoholic beverages was for the period 1940-1950. Had he chosen 1930-1950 instead of 1929-1950 he would have reported that the increase for tobacco was 204% and the increase for medical care was only 192%—the ratios were 3.04 and 2.92.

"BUNDLES OF JOY"

But let us be as fair as possible to this sociologist who is not familiar with customary economic and statistical terms and choose a period of time for him during which data on personal consumer expenditures for alcoholic beverages along with his other items are available—most readers know that the sale of alcoholic beverages was not reported by the Department of Commerce in 1929, the boom year of the prohibition era. The 1953 personal consumer expenditures exceeded those of 1945 by the following percentages: medical care, 98; tobacco, 79; recreation, 94; jewelry, 26; personal care, 33; and alcoholic beverages, 18. We chose this post-World War II period knowing that it would show a higher percentage of increase for medical care than for these other items for the purpose of *illustrating* a fundamental defect of the book and of Davis' point of view. Why did personal consumer expenditures for medical care increase more during this eight year span than for the other selected items? Was it because this was an extremely unhealthy period? Was it because the American people were being robbed by their physicians? Does it manifest the failure of fee-for-service? Does it result from the slowness of development of restrictionist group-practice schemes? Would the percentage increase for medical care have been much less under national health insurance? Was it because hospital room rates and physicians' fees were rising too rapidly? The major reason for the more rapid increase of medical care expenditures was an extra million and a quarter "bundles of joy," for the birth rate rose by leaps and bounds during this eight year period; and births increasingly involve hospital expenses for the family.

Davis does not divide the people into tall and short, old and young, but simply into two ironclad groups—the sick and the well. He tries to give the impression that all expenditures for medical care are for disease or trauma, but he never separates them. The fact that some medical care expenditures are for childbearing did not fit into his propaganda scheme. We doubt that he would attempt to prove that pregnancy is a disease. How well people spend their money other than for health insurance is no problem for Davis. How the sick people spend money for things other than medical care is not his concern. A person is either sick or well. One cannot help but admire the courage of Davis in thinking he could prepare a comprehensive analysis of medical care for physicians or anyone else without recognizing that there are many ways of classifying the American people. He is careful, however, to avoid saying specifically that every cent spent for medical care is an expenditure for a necessity, but the whole tenor of the book plays down the opportunity for free choice in a free society.

ORGANIZATION OF BOOK

The most simple statement that might be made to characterize the organization of this book would be that it breaks down the medical care complex into three elements: the personal, the organizational, and the economic. The first three of the four major parts of the book are devoted to definition and historical survey of each of these segments, with indication by the author of what he considers to be the problem areas involved. On basis of this dual objective-subjective approach, he projects his opinion of the direction of change and the tack that should be taken by society. In the final part of the book he summarizes his analysis and presents what may be defined as a general outline for social planning for the medical care field in the future.

The six chapters of part 1, Basic Elements in Medical Services, are an analysis of what he considers to be the fundamentals of medical service: people; their health needs and demands; physicians and allied professions; and the economics, organization, and quality of service. Davis' approach is to analyze the problems within each area; for example, the inherent difficulty the consumer faces in trying to assess quality of medical care; and conflicts within the profession itself, as between salaried physicians and self-employed practitioners. It is in this section that he develops his principal thesis: that science and technology have so transformed medicine that revolutionary changes in the entire realm of medical care are both necessary and inevitable.

Part 2, Evolution in Organizations, comprising chapters 8-14, deals with the historical development of organizations and public services having to do with the field of medicine. Included is a chapter (12) dealing with what Davis considers to be the dilemma of the physician, torn between professional and financial incentives under a fee-for-service system. He also deals with the nature and realm of tax-supported medical care. A major part of the writing is an attack on the organized medical profession. This criticism is then linked to his analysis of what he considers to be the changed relationship between physicians and hospitals. Briefly, it is his contention (as it has been for several decades) that the trend toward larger, general hospitals engendered by scientific and technological developments has been of such magnitude that medicine is no longer conducted by individual physicians; the hospital is and should be the unit around which medical care is organized.

Part 3 is entitled Evolution in Economics, chapters 15-18. Davis traces the growth of health insurance and deals with the controversy of proprietary (voluntary) versus social insurance. This discussion aims at establishing three points: (1) comprehensive insurance is possible; (2) the indemnity approach is limiting; and (3) the voluntary principal has, by definition, certain basic disadvantages. He also traces legislation and politics as they pertain to medical care. In effect, this is an attack on the methods and purposes of organized medicine in opposing certain federal health legislative proposals. Part 4, Programs and Outlook, chapters 19-27, is given over to methods of implementing the policies that Davis has outlined as desirable

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Director, Bureau of Medical Economic Research.

in preceding sections: replacement of fee-for-service payment; encouragement of group practice, particularly when linked with an exclusive prepayment plan; and gradual progression toward comprehensive national health insurance. Davis sums up his book as follows: "The analysis of past and present forces made in this book justifies the conclusions, that this demand [for comprehensive coverage] is already sufficiently widespread to be a politically significant force irrespective of political party; that the demand will continue; and that it will bring almost universal group payment, as it gradually focuses upon specific objectives" (page 371). There are four appendixes, the last of which is a long bibliography that, because of omissions, will be of greatest use to his followers.

The final chapter, From Today into Tomorrow, stresses "gradualism," which he would expedite so that we might have the full benefit of government control of medicine as soon as possible. In many ways this last chapter is the most mellow of all of Davis' writings. The objective is still clear, national compulsory health insurance, but we must not try to attain the goal with too much haste; however, the goal is inevitable. It will be attained no matter what physicians or nonsocialists may try to do about it; it is only a question of time. So the dominant note of this book is that socialized medicine is inevitable and we must accept it.

IS SOCIALIZED MEDICINE INEVITABLE?

The trend toward socialism in the United States is beyond dispute. Big government is playing an increasing role in our lives, in the field of medical care as in almost every other aspect of our lives. The fact that the government role has increased is not news. Davis, of course, does not discuss the increasing role of government in the lives of well people but only the increasing role of government in medical care. Whether this aspect of increasing government control is lagging or leading is of no concern to him; it should be to a writer concerned with medical care today and tomorrow, for it is the relative increase in government control that is significant in forecasting.

One of Davis' principal criticisms of the American medical profession today is its fee-for-service system of payment. This system, under which the indigent are treated for low fees or no fees and the high income groups are charged higher fees, is inadequate, according to Davis, because: (1) it is difficult for the physician to measure ability to pay, and (2) the range in cost of procedures has increased so greatly. Davis advocates a method of fee determination similar to collective bargaining between groups of physicians and consumers. Eventually, he points out, fee-for-service payment will be impossible; under any sort of broad medical care plan standardized fees would be imperative. In other words, only through government could the "proper" charges be made for the services of physicians.

There are many who will not heed this voice of impending doom to the fee-for-service system. There are many who believe that there is an ebb and flow in the role of government in the history of mankind, and the present may merely be one of the high peaks in that undulating wave. Even if government control of medicine is "inevitable," they will want to postpone the evil day as long as possible, for all that is inevitable is not good. Davis' buildup of this bugaboo of inevitable government absorption of the medical profession by careless use of statistics is of only minor importance. For example, he worries a good deal about whether the expenditures of the Department of Defense should be added to personal consumer expenditures for medical care, but he does not even mention the medical expense of the Veterans Administration for the care of veterans with service-connected disabilities. It seems to us that both of these public expenditures are clearly costs of present, past, and future wars and are not to be confused with the expenditures people make as consumers for medical care. Davis is correct in pointing out that the role of government in the medical care of the American people has increased during recent decades. This note of inevitability is a familiar device that has been used frequently—perhaps most effectively by Karl Marx in predicting the ultimate domination of the bourgeois by the proletariat in his two-class approach to social evolution.

We have noted Davis' lack of consideration of the medical cost of childbearing as a rapidly expanding type of medical care expenditure. Under the prevailing fee-for-service system, which he considers anachronistic, it is possible today for a husband to tell his wife that her chances of dying in childbirth are only one-ninth of the chance that her own mother had of dying in childbearing a generation ago. Surely the phenomenal reduction in the risks of childbearing has been a factor in the rapid increase in births and the accompanying medical expenditures. Presumably Davis would answer this comment by merely saying that there are still more than 2,000 maternal deaths (pregnancy and childbirth) in the United States each year and this proves the need for replacing the fee-for-service system. Such a retort would be very difficult to answer, for it implies that the prevailing system of medical economics is a failure if anyone dies. Going to the other extreme of life, the death rate during the first decade of retirement, ages 65 to 74, has declined about 30% since 1900. The great accomplishment of the 20th century, which is that we are dying old instead of dying young, is not mentioned, because Davis has little interest in what we get for what we spend for medical care under our present fee-for-service system. There is, in fact, little reason why a man blinded by what seems clearly inevitable to him should be interested in such mundane questions of medical economics as demand and supply, price and value, and buyer and seller.

SOME FAMILIAR CLICHÉS

The book abounds with many of the clichés repeated over and over again by the advocates of socialized medicine. Let us examine a few of them briefly but critically. A consumer is not competent to select one physician and should only select a group—if more than one group is within reach. Admittedly, medical care is often an unwanted consumption item, but Davis does not seem to have any way of making the purchase of medical care as attractive as purchasing a new television set; unless, perhaps, compulsory purchase through the collection of "insurance" taxes—from some—might make the purchase of medical care seem painless. Room rates in hospitals have risen rapidly, but Davis does not warn the reader that under socialized medicine hospital room rates would probably have risen much faster. Certainly the example of per diem costs in Veterans Administration hospitals for veterans with non-service-connected disabilities does not indicate that socialized hospitals would reduce the cost per patient day. He also repeats the error of so many in his claim that the percentage of income spent for medical care is higher in the low income families without first classifying families by the age of the members. The fact that the maximum frequency of physician visits is to preschool children whose parents are in the low earning period of life gives rise to the illusion that low income families spend a higher percentage of their incomes for medical care; the percentages may well be about the same for families of a given age distribution with different incomes. He claims that the earnings of physicians as a group are higher than those of any other profession. The United States Department of Commerce in its surveys prior to World War II pointed out that the incomes of certified public accountants and consulting engineers were considerably above those of physicians. Although no comprehensive postwar study has been made of the incomes of these two professions, the income tax has not become less complicated and the building boom has certainly increased the demand for services of the consulting engineer. The simple fact is that the average income of physicians since 1929 has increased at almost exactly the same rate as the average incomes of all gainfully employed people, thus indicating an economic balance between supply and demand.

In one of his many references to publications of the Bureau of Medical Economic Research (page 55) he again reveals his inability to handle statistics. Specifically he charges that the claim of increase in "output per physician" since 1940 is questionable because all physicians do not have the same skill, facilities, and assistance; some have more than average and some have less than average, but the gain in output per physician was very marked. His charge (page 103) that the American Medical Association is not a democratic organization because the Trustees and not the House of Delegates approve budgets is wrong on two counts. First, we would remind Mr. Davis that in our federal system the members of Congress do not elect the members of the President's cabinet, but the A. M. A. House of Delegates does elect the Trustees. Second, the financial operations of the Association are carefully scrutinized by the House of Delegates.

In chapter 17, Proprietary Versus Social Insurance, and elsewhere in discussing the economic side of medicine Davis seems to be unaware of the large volume of personal savings. Certainly medical care is one of the rainy days for which people save, and these savings are often available for medical care expenditures, making the use of current income unnecessary. Voluntary insurance to prepay all manner of "five and dime" claims is not necessary, and the overhead costs of operating such a "complete" voluntary health insurance system would be a dead weight on the American consumer.

The socialist's distaste for small business is manifested time and time again in his approach to group practice, which is not increasing as rapidly as he thinks it should. He pointedly omits distinguishing between group practice per se—to which the A. M. A. has no objections—and group practice as an agency for delivering the medical care purchased through a prepayment plan that permits only the particular group of physicians to provide the medical care for which the prepayment was made. Several members of the Board of Trustees of the American Medical Association have spent most of their professional lives in medical groups.

It is on the subject of rural practice that the author reveals a complete lack of consistency. In one place he bemoans the shortage of physicians in rural areas (chapter 25) and elsewhere advocates concentrating physicians in group practices in well-located cities. This is equivalent to saying that we can have our cake and eat it too—that if there were 3 physicians in a large town and 10 more in each of 10 widely scattered small towns within a radius of 100 miles, the way to provide more physicians in rural areas would be to persuade these 10 physicians to leave the 10 small towns without a physician (or import them from elsewhere), join the 3 physicians in the largest town, and form an "efficient" group practice.

SUMMARY

In summary, this volume appears to be an encyclopedic treatment of problems in medical economics, but it is really a restatement of the views of a socialistic planner who wants to dispense with the private practice of medicine as soon as that inevitable day of grace can be accomplished. No miracle man, gazing at the promised land, is needed to solve the present and future difficult problems of the medical profession in its continuing efforts to improve the quality of medical care.

Carcinoma of the Larynx.—An average of 135 patients with this condition are seen annually at the Mayo Clinic. This is approximately 120 patients per 100,000 clinic registrants. Like malignant disease of the mouth and pharynx, it is encountered much more frequently in males than in females, the proportion being more than ten to one. . . . Carcinoma of the larynx can be cured in an appreciably higher percentage of cases than at present if these lesions are diagnosed in an earlier stage. Although patients with this condition are now consulting laryngologists more promptly than a decade or two ago, in a number of them the process is already well advanced at the time of the initial visit. Many of them require radical surgical treatment which might well be avoided, if the physician consulted primarily suspects the serious nature of the laryngeal lesion. Most of these neoplasms develop on the vocal cords, and a change in the quality of the voice, or persistent hoarseness, generally occurs early. Accordingly, keener appreciation of the possible significance of chronic hoarseness by the physician and the laity will improve the present situation. Continued education of the public, too, will help but it is essential also that the physician maintain a high degree of suspicion.—F. A. Figi, M.D., Carcinoma of the Larynx and Its Present-Day Management, *The Annals of Otology, Rhinology and Laryngology,* March, 1955.

PUBLIC RELATIONS

The material appearing in this column is prepared in the office of the Public Relations Department of the American Medical Association.—Ed.

TULSA HEALTH SURVEY

A health survey of the city of Tulsa, Okla., conducted by the Tulsa County Medical Society and the health division of the Tulsa Council of Social Agencies, has revealed a generally favorable attitude toward the medical profession, although some deficiencies and weaknesses were disclosed. Assisting in the study was a technical committee from the Tulsa chapter of the American Statistical Association, which adjudged the survey data to be "representative of the opinions and characteristics of the population." Some of the principal findings, most of which should have a public relations interest for physicians and medical societies, follow.

Eighty-three per cent of the people interviewed believe that there is a need for some system of assuring emergency medical care. Eighty-four per cent think that a physician should discuss his fees in advance with the patient. Over half—54%—consider Tulsa physicians' fees to be reasonable, but 30% think they are too high. The remainder have either no opinion or mixed opinions. Eighty-seven per cent have a regular physician either for adults, for children, or for both. Eighty-three per cent of the people who have had a family member hospitalized within the past year are satisfied with the services rendered at Tulsa hospitals. Sixty-one per cent of the people who have had a family member hospitalized within the past year consider hospital charges to be reasonable, but 32% think they are too high. Seventy-four per cent of the families have health insurance of some kind, either Blue Cross, commercial, or a combination of the two.

In the field of preventive health measures, the survey revealed that only 37% of Tulsans had had a physical examination during the previous year, and only 32% had had a chest x-ray in 1953. However, 74% had had a chest x-ray at some time in the past. Among children under the age of 6, only 21% had been vaccinated for smallpox, and 62% had received all three injections for diphtheria, whooping cough, and tetanus.

The questioning on the need for an emergency call plan revealed that, out of 485 families covered in the survey, 90 (or 19%) reported at least one medical emergency during the previous year. Of those 90 families, 9 said they had had difficulty in obtaining the services of a doctor. Of the 9 experiencing difficulties, 5 were among the 77 families having a regular physician and 4 were in the group of 13 families without a regular family doctor. The opinion favoring an emergency call system was by no means limited to those without regular physicians or to newcomers in the city; in fact, it was strongest among those with family doctors and among those living in Tulsa for three years or more. Of the 404 families favoring an emergency medical call plan, 86% had a regular doctor. Among the 414 families living in Tulsa for three years or more, over 84% favored an emergency plan.

The survey report made the following comment on this phase of the study: "In analyzing the comments made it was found that (1) many informants saw no need for an emergency medical call plan for themselves but recognized a potential value to newcomers and other persons without the services of a regular doctor, (2) the desire of the informants for such a plan was based in large measure upon a fear of being unable to obtain a doctor when needed. Thus the plan appears to be desired as an element of community security."

A question concerning Tulsans' preference as to the best location for their physician's office brought the following results: 46% preferred a residential area; 23% favored a downtown location, and 31% were equally agreeable to a downtown or residential office site. On the subject of advance discussion of fees by physicians, most of the informants stressed its value in budget planning, particularly when extensive surgery or prolonged medical care were indicated. Some were critical of physicians who in the past had failed to discuss fees or had put off the discussion with vague statements about costs. Analysis of the opinions on medical fees showed that the higher the income, the more favorable was the viewpoint toward physicians' charges. The major criticism of hospital services was the shortage of nurses.

Dr. John G. Matt headed the health survey steering committee, and Mr. Milton Searl was chairman of the technical committee. Miss Lois Tubb, secretary of the health division of the Tulsa Council of Social Agencies, served as secretary and coordinator for the project. The survey findings were put into manuscript form by Mr. Jack Spears, executive secretary of the Tulsa County Medical Society. Assistance in the tabulation and review of statistics was given by Mr. Lyndral Marcum and Mr. Frank Craig, both of the Blue Cross-Blue Shield Plans of Oklahoma.

MISCELLANY

ADDRESS BY NORMAN VINCENT PEALE, D.D.

When I began my ministry in 1923, I had no concept of any direct relationship between religion and medicine. One recognized, of course, that right living was an aid to well-being, but only in a general sense. Religion seemed primarily a system of ethics and theology concerned with man's relationship to God, with the moral and spiritual betterment of the individual, and the improvement of social conditions.

Medicine, we regarded as a scientific practice having to do with the cure of disease entirely through materialistic processes. I was a strict materialist as to medicine and regarded as cranks those who described case histories of healings in which faith was claimed as a factor. Caution still seems indicated in the acceptance of non-medical healing beyond the religio-psychosomatic influence. But that amazing phenomena *do occur* which are seemingly of God and outside the framework of man's knowledge, we would not deny.

Being of a somewhat scientific turn of mind, although not a scientist, I found it difficult at first to think of religion as more than comfort and solace in time of illness. But gradually, the realization that we live in a dynamic universe and the growing acknowledgment of a world of reality beyond the material affected my thinking, as no doubt it did yours.

Yet, it was the repetition of certain experiences that convinced me that as ministers we have a part in the healing work of God. I re-studied the Bible from this point of view, and was amazed to note the repetitive emphasis upon its principles as factors in the total well-being of man. One experience will illustrate.

A woman outlined a number of ways in which she felt ill physically, emphasizing her fears and tensions. I had a curious feeling as I listened to her unhappy recital that a grey veil was over her face. There was, of course, no such veil, but the impression might perhaps have been gained from an emanation of her unhappy spirit. I thought of it recently when an advertisement appeared in the paper picturing a harried and worn man, head in hands. Beneath the picture was a caption which read, "Have you that grey sickness—half asleep, half awake, half dead, half alive?" Physicians have told me that a long held mass of unhappy thoughts can produce physical symptoms of illness.

Indeed, when I asked this miserable woman her doctor's opinion, she quoted him as saying, "You are draining back into your body the diseased thoughts of your mind." This impressed me as a most expressive insight.

STORY OF FAITH

Then occurred an amazing happening. I asked her if she believed in the actual healing presence of Christ. She replied that she did. I then explained that worry may be described as a spasm of the emotions, in which the mind catches hold of a thought or obsession, clutches it spasmodically and will not let it go. To break its hold, one must gently, but forcibly, insinuate a healthier and stronger idea into the mind's convulsive grasp. This stronger idea that we desired her mind to take hold of was faith in the healing grace of Christ. So, I asked her to affirm aloud, "Jesus Christ is by my side. He is touching my mind, my body, my soul with His healing grace." Apparently her mind opened and received this truth, for there began a process of change that presently freed her from her fears and tensions and brought her to a state of well-being.

TRIBUTE TO PHYSICIANS

What little experience I have had in this field certainly does not qualify me to discuss so important a subject before so eminent an organization as the American Medical Association. But I appreciate the very great honor of addressing your distinguished body. Feeling my inadequacy, I have drawn upon such experts as Rev. Dr. Otis Rice and Rev. Dr. Paul L. Tilden of the Department of Pastoral Service of the National Council of Churches. These eminent professional men have under their supervision the Commission on Religion and Health.

Also, I owe a debt of appreciation to my medical brother, Dr. Robert Clifford Peale of Olean, New York and to my esteemed associate, Dr. Smiley Blanton, Executive Director of the American Foundation of Religion and Psychiatry, and to Dr. Iago Galdston of the New York Academy of Medicine, for their insight into the important relationship of the physician and the pastor.

It is a high privilege to appear tonight on "Medicine's Proclamation of Faith" program upon the occasion of the inauguration as President of the American Medical Association of one of the most eminent men in your profession, Dr. Elmer Hess. I have followed the thinking of Dr. Hess and have admired him not only for his professional competence, but also for his keen insight into the place of the spiritual in the healing art and for his forthright enunciation of his positive convictions.

Clergymen hold the Doctor of Medicine in high esteem, not only as a scientist, but also as a servant of God who is called to a task no less sacred than their own. Does not the physician deal with the body, which is the temple of the soul? Moreover, since it is now recognized that sickness and health are not infrequently related to states of mind, the functions of the clergyman and the physician actually seem to draw more closely together. Of course, the clergyman scrupulously avoids infringing upon the sphere of the physician, his desire being only to help the patient in such a manner as may seem proper. Tonight's program is an event of far reaching significance when the great American Medical Association calls the attention of the nation to the importance it ascribes to faith in the practice of medicine. Clergymen, as well as the public, generally give sincere thanks to God for American medicine under our American freedom. Here in this climate of faith and freedom medicine is ever reaching new heights of achievement and new ability to serve humanity.

WORKING TOGETHER

Symbolic of this progress is the increasing cooperation of doctors and ministers, based as it is on the recognition that man is soul as well as body. It seems rather generally accepted currently that there are physical symptoms which are actually employed by the total personality to express emotional disturbances or even spiritual needs. Therefore, treatment of the physical symptom is apt to be more effective if the emotional or spiritual need is concomitantly cared for. This specifically calls for understanding cooperation between two types of professional competence, the physician and the clergyman.

An illustration is the case of the middle aged businessman who evidenced symptoms suggestive of a stroke. Formerly active, even dynamic, he became extremely lethargic. His mental and physical reactions slowed down. His physician concluded that the basic trouble lay in the spiritual field. Ultimately, a catharsis

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Pastor, Marble Collegiate Reformed Church, New York.

This address was presented at the inaugural ceremonies at which Dr. Elmer Hess was installed as president of the American Medical Association, Atlantic City, N. J., June 7, 1955.

of the mind was brought about in which he emptied out a mass of hate and guilt that had accumulated over a lengthy period. This had stimulated a chronic fear and had developed a profound depression. Apparently both body and mind conspired in an effort to effect a retreat from life. He complained of insomnia, among other difficulties, and we asked how he expected to sleep well with two such annoying bedfellows as anxiety and guilt. It came out that he was involved with a married woman who threatened to expose him to her husband if he broke off their illicit relationship. Since he was a respected citizen in his small community, this meant ruin and he lived in perpetual terror. However, we encouraged him to sever this evil relationship regardless of consequences. When the weight of guilt and fear was lifted through confession and divine forgiveness, the symptoms left him and he returned to an apparently normal state, except for a residual tension problem which is gradually being reduced by medical treatment and the therapy of right thinking.

One of the greatest physicians with whom I have worked exemplifies this ability, as a godly doctor and a thoroughly consecrated layman, to mediate spiritual values upon occasion with medical procedure. This physician is a former missionary doctor. So profound is his understanding, so skillful his science, so spiritual his character, that if I were approaching the end of my own earthly life, I would be content to have the benefit of his services, both as doctor of the body and physician of the soul. In both personality and scientific skill, he is an excellent example of what we might call the priesthood of the laity.

WOMAN HELPED BY FAITH

A woman patient had been consulting this doctor regularly, showing him a spot, always asking in terror, "Is it cancer?" On her fiftieth birthday, she repeated the question. He studied her, then said, "Today you are fifty, and for years your full happiness and well-being have been frustrated by your fears. Now is the time to get free from them." She then revealed a previously untold childhood experience, which proved to be a source of her trouble. At eight years of age, her sister, a beautiful girl, had died. She, however, had been rather plain, and her mother complained bitterly as she stood by the casket, "Why wasn't it you?" This rejection and severe wound of the ego produced a hatred of her mother, which she had unconsciously carried all these years. Also, an unconscious feeling of unworthiness developed. The doctor, realizing the emotional and spiritual operation that needed performing, encouraged her to empty out her hate and mental suffering. He then prayed with her, that God would grant her peace. While the required change in thinking was not easily attained, she has become, so he reports, a much healthier and more normal person. It should be added that in usual circumstances, this physician uses the clergyman where spiritual treatment is indicated.

PRESCRIPTION FOR LIVING

Another doctor with whom I am closely associated keeps books of a spiritually inspiring nature on his waiting room table. On another table are the usual selection of magazines. The office nurse who keeps careful watch, told me that by far the largest number of patients read the books. This doctor has often prescribed such reading as a part of his treatment, and with good effect. I have known a number of physicians to write as a prescription the reading of certain books on right spiritual thinking. These prescriptions were filled at the book store, rather than the drug store.

God heals in two ways: through his servants, the practitioners of scientific medicine, and through his servants, the pastors, practitioners of sound faith. And it may well be added that while faith partakes of the philosophical and theological, yet the spiritual laws of the Bible demonstrate an exactitude when believed and practiced that suggest characteristics of an exact science. Science may be described as a mechanism for the transmission of power through law. Religion meets that test when its workable formulas are used as a way of life. The combination of God and the doctor—i. e., the physician who treats and God who heals—is no less a religious process than the cure of souls or the cooperative function of God and the pastor. The pastor treats and God heals the deep lesions and maladies of the soul life.

ROLE OF FAITH

Recent work dealing with the effect of stress on the body would seem to further bring together the disciplines of religion and medicine, since the effect of prayer, faith and love in healing those mental states that stimulate tension is widely known. Jesus Christ, called the Great Physician, spoke much of health and healing. While He did heal physically, His chief emphasis was that right thinking and religious living lead to holiness, another word for wholeness or well-being.

In addition to the contribution of the physician, the work of the pastor in bringing to the patient the calm certainty of faith, the knowledge of prayer, an intellectual basis for belief, the healing power of love and release from sin is efficacious in reducing and controlling stress.

A New York physician sent us a patient whose problem was stress. He had given proper treatment, but was unable to get a satisfactory result. He made an effort to probe deeper level emotional and spiritual attitudes, but the patient resentfully declared that his morals had no relation to his physical condition. But the physician thought they did and suggested that he consult me as a pastor. It finally came out that the patient, as he himself described it, had been "siphoning off money" from an estate he was managing for the adolescent son of his deceased brother. He had attempted to rationalize his thefts, but finally admitted his wrongdoing. He sought and received forgiveness and began the process of restitution. So deep was his relief upon his mind being cleansed of this guilt that the physical stress manifestations greatly improved.

The physician commented that "he couldn't heal the body until the soul had been healed, and that the stress in this case was a symptom of the ill health of guilt." This, of course, is not to imply that all stress has such cause, for the pressure, responsibility and general tension of our time are profoundly contributing factors. In all these matters, the healing of the peace of God may be mediated through a dedicated doctor and clergyman, each working within his own field, and yet in cooperative understanding.

SERVANTS OF GOD

The physician is surely one of the most beloved figures in America. When sickness comes, the arrival of the doctor brings hope and comfort. To him, people look for healing and deliverance from pain and fear. "Everything is all right; the doctor is here" is said with relief and love. What a privilege to enter with such affection into the lives of human beings.

The clergyman, who himself is intimately associated with men, women and little children in the deep experiences of their lives, salutes with faith and esteem those great servants of God and humanity, the doctors of America.

1 W. 29th St. (1).

Swallowed Foreign Bodies.—The symptoms of swallowed foreign bodies are usually minimal and there is a long latent period between the incident of swallowing and the onset of clinical signs of complication. A good history and a high index of suspicion are the most important facets leading to a correct diagnosis. A patient's statements concerning swallowed objects should not be regarded lightly. Examinations of roentgenograms by the physician immediately responsible for the patient's care is most important. Unexplained fever, pain, or roentgenographic findings should be carefully investigated. Repeated studies and examinations are often necessary to identify the presence of a foreign body. Only a few patients need be subjected to surgical removal of the foreign body, because most objects which have reached the stomach will pass on through the gastrointestinal tract. Surgical intervention should not be instituted on the basis of the history alone, but rather on the evidence of peritonitis, obstruction, or lack of progression of the foreign body through the gastrointestinal tract. In patients needing operative removal, the procedure is usually accomplished easily.—Col. R. T. Gants (MC), U. S. Army, and Major J. B. Jay (MC), U. S. A. F., Foreign Bodies in the Gastrointestinal Tract, *United States Armed Forces Medical Journal,* July, 1955.

LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Malpractice: Physician's Liability for Negligent Nursing Procedures.—The plaintiff sued for injuries to his hands allegedly resulting from the negligence of the defendant physicians. From a judgment in his favor, the physicians appealed to the Supreme Court of Pennsylvania.

The plaintiff had been a mental patient in the Allentown State Hospital since 1943, suffering from manic depressive psychosis. This illness is characterized by fluctuations from periods of depression, worry, and loss of weight, to periods of overactivity, lack of restraint, and excitability. Part of the time the patient may seem entirely normal, and his emergence from one mood to another may occur suddenly. During the overactive period the patient, in common language, is a raving maniac. In May, 1946, the plaintiff escaped, and when he was returned by the police on the following day he was in this violent manic state. One of the defendants ordered a wet pack to be administered, and the order was followed. Later a nurse reported that the plaintiff was physically fit but still violent, so a second wet pack was ordered. After that, the supervising nurse was told to continue with the wet pack treatments as long as the patient remained violent but physically fit. Altogether, three wet packs were given.

The wet pack treatment is administered to patients whose mental condition renders them violent. This treatment is a means of both calming them emotionally through the therapeutic effects of warm water and restraining them from violence. Such treatment is administered in the following manner. Sheets, usually six, are immersed in water. They are then wrung dry; the arms are separately wrapped and the sheets then wrapped around the body and the arms and legs, so that the patient is completely swathed in sheets from his head to the tips of his toes. Two sheets are used as ties, one placed about the body and arms in the region of the elbows and tied, and the other is tied above and below the knees. The patient is able to move his limbs but he cannot free himself. He is then immersed in a tub of water, the temperature of which is controlled by a thermostat at about 94 to 96 degrees. He is kept in the water for a period of approximately six hours. When he is taken out, the sheets are removed, and his body is bathed and rubbed with oil or grease. Fresh sheets are then applied, and he is again immersed in the water. Generally the patient receives a series of these treatments, the number and duration of which depend upon his mental and physical condition.

Neither of the defendants took any part in the administration of these treatments. While the treatments are given only on order of the physician, their administration—that is, wrapping the patient in sheets, immersing him in water, checking the water temperature, checking the pulse and respiration, observing him, and reporting thereon to the physician—is strictly a nursing procedure and is performed only by the nurses and attendants. At no time are physicians present or required to be present unless the reports from the nurses and attendants indicate a necessity therefor. Dr. Goshorn was the plaintiff's expert on the subject of method of administering wet packs. Both on direct and cross examination he reiterated that its administration is entirely a nursing procedure and that the physician is never present or required to be and that he relies on reports from the nurses. Dr. Goshorn testified that the mental condition of the plaintiff might require continuing the treatment without regard to the physicial condition. His opinions were based on 23 years of experience. Not a single person, physician, or layman, appeared to contradict the evidence, or to deny that it was the standard practice, or to state that it was improper, or that it was not in accord with the best practices of the profession.

After the treatments the patient's hands swelled and blistered, became infected and deformed, and lost 60% of their normal function. The plaintiff contended that such injuries were the result of the defendants' negligence in failing to properly supervise the administration of the packs and in opening some of the blisters with a knife, which one of the defendants carried in his pocket.

The duty imposed by law on the defendant physicians is the employment of such reasonable skill and diligence as is ordinarily exercised in their profession, giving due regard to the advanced state of the profession at the time of treatment. It has been uniformly held that expert testimony is necessary to establish negligent practice in any profession. What the lower court decided and what was determined by the jury was not whether the defendants had been guilty of negligence in following the well-recognized and established mode of treatment but rather whether the mode of treatment was proper. It was shown in the face of testimony produced by the plaintiff's own experts that the treatment and methods employed were of long-standing both in the Allentown State Hospital and elsewhere. Thus, the court permitted the jury of laymen, without knowledge of these practices, to say that a treatment was improper, which expert witnesses said was in accordance with the accepted practice.

In the instant case the plaintiff failed to show by any expert testimony just what Dr. Risser should have done or refrained from doing. From the circumstances that a verdict was recovered, the inference is that Dr. Risser should have been present and that he should have examined the plaintiff between each pack and during the course of them. The testimony of all the experts called on either side of the case was that this requirement was not a part of the standard and accepted practice. It is also the general rule that a physician is not liable for injury to a patient, where such occurs as a result of nursing procedures, said the Supreme Court.

So far as injuries resulting from the breaking of the blisters with a pocket knife, the court said that there is no evidence that the use of the nonsterile knife could have produced the injuries to the plaintiff, or indeed contributed to them. The plaintiff's only expert on this phase of the case, Dr. Marcks, stated that he did not "believe that infection had a thing to do to contribute to the development of the deformity (of the plaintiff's hands)"; and he testified that "the use of unsterile instrument" to open blisters as mentioned might contribute or be a contributing cause to infection but not be a contributing cause to the deformity the plaintiff had. The testimony of Dr. Marcks was plainly insufficient to charge Dr. Daley with negligence in that it failed to show the connection between the injury resulting from the negligent act and a later condition.

Accordingly, the judgment of the trial court in favor of the plaintiff was reversed, and judgment was entered for the defendant physicians. *Powell v. Risser, 99 A. (2d) 454 (Penn., 1953).*

Paternity Tests: Results Must Exclude Paternity.—The plaintiff started a bastardy proceeding against the defendant. The trial court entered a judgment for the plaintiff, and the defendant appealed to the superior court of New Jersey, appellate division.

The trial court, pursuant to state statute, directed Dr. Phillip Levine to perform blood-grouping tests on the plaintiff, her child, and the defendant. The state statute authorizing such tests permits the expert who gives the tests to testify only if the results show a definite exclusion of paternity on the part of the defendant. At the trial Dr. Levine was asked by the court if the instant tests showed exclusion. He responded that on the assumption that the plaintiff had a very rare and unusual serologic make-up the tests did show exclusion. The court then refused to permit Dr. Levine to testify as to the results of the tests, even though, when the pertinent statute was enacted in 1939, the problem of an unusual serologic make-up, which Dr. Levine had in mind, was unknown to medical science.

The superior court held that the trial court correctly applied the statute law, which forbids using the results of blood grouping tests as evidence, except where such tests definitely establish exclusion. The court said that the admission of testimony by Dr. Levine concerning the effect of such tests of the serologic make-up of the plaintiff would, in effect, either constitute an exception to the statute or permit testimony discrediting the finding of exclusion. Whichever would be the effect of the testimony, the result would violate the statute and amount to judicial legislation. The judgment for the plaintiff was therefore affirmed. *Miller v. Domanski, 97 A. (2d) 641 (N. J., 1953).*

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Further Evidence That Hyperthyroidism (Graves' Disease) Is Not Hyperpituitarism: Effects of Triiodothyronine and Sodium Iodide. S. C. Werner, M. Spooner and H. Hamilton. J. Clin. Endocrinol. 15:715-723 (June) 1955 [Springfield, Ill.].

The effects of triiodothyronine and of thyrotropin were observed in patients with active hyperthyroidism, euthyroid patients with ocular signs of the disease, patients in sustained remission from the disease, and euthyroid control subjects. The failure of triiodothyronine to depress thyroidal radioiodine uptake in the patients with hyperthyroidism provides indisputable evidence that the normal reciprocal pituitary-thyroid relationship is disrupted in this disease. The 2 mg. daily doses of the drug were the approximate equivalent of 2.6 to 3.2 gm. of thyroid daily, and caused enough clinical exacerbation of the hyperthyroidism to necessitate stopping treatment after six days. The concept is thus untenable that hyperthyroidism is due to a pituitary "thermostat" set to maintain too high a blood level of thyroid hormone but functioning normally at this new level. The failure of the pituitary to be suppressed by either thyroid or triiodothyronine also makes untenable the alternative possibility that the pituitary becomes hyperactive because the thyroid in hyperthyroidism secretes an abnormal thyroid hormone that cannot suppress the pituitary. No abnormal secretion has been found in hyperthyroidism. A striking amelioration of hyperthyroidism was produced by the administration of sodium iodide. The recovery, if occurring in the presence of an excess of thyrotropin, would necessarily imply interference with the effect of thyrotropin, but when small doses of thyrotropin were given, the release of thyroid hormone was great enough to suggest an increased sensitivity to the hormone. Thus the evidence suggests that no excess of thyrotropin is present in hyperthyroidism and that hyperpituitarism is not the causative factor. That the thyroid gland has an intrinsic mechanism, not under pituitary control, for trapping iodine and regulating the extent of this trapping during iodine lack has recently been demonstrated in the hypophysectomized rat. Derangement of such a mechanism could result in hyperthyroidism, as could a derangement of other extrapituitary processes which, in turn, might control this mechanism or those as yet unknown. As a corollary, the study suggests that iodides do not act in hyperthyroidism by inhibiting the effect of thyrotropin, but rather act directly on the overactive thyroid cell, partly at least, by inhibiting the release of thyroid hormone. The use of triiodothyronine was found to have great diagnostic value, since failure of suppression of thyroidal uptake is indicative of hyperthyroidism.

Lipoid Pneumonia. A. O. Hampton, C. E. Bickham Jr., and T. Winship. Am. J. Roentgenol. 73:938-949 (June) 1955 Springfield, Ill.].

In 35 patients between the ages of 3 months and 86 years with lipid pneumonia, the causative agents included animal, vegetable, or mineral oil. After either oral or nasal administration of oily material, portions of it remain adherent to the pharyngeal mucosa and sometimes drain into the trachea. If this is repeated, enough oil may collect in the alveoli to produce pathological changes. In 22 patients lipid pneumonia was produced by the voluntary ingestion of mineral oil to combat constipation, in eight patients by nose drops, in two infants by milk and cod liver oil, and in one patient by petroleum jelly. No history of oil ingestion was obtainable in the remaining two patients. Cough, dyspnea, and chest pain were the most frequent complaints. The most common physical findings were dulness to percussion, harsh breath sounds, and bronchovesicular or bronchial breathing. One patient showed pulmonary osteoarthropathy. A low grade fever was present in several of the patients with diffuse disease. Roentgenologic examination revealed densities produced by the disease that varied in their size, shape, and location. They could be classified as diffuse or nodular. The diffuse group, occurring in 24 patients, was characterized by diffuse, fine, linear, spun-glass-like densities, the periphery of which sometimes was fairly sharp but more commonly faded out into the lung fields. These densities were clustered together, and intermingled with them were areas of rarefaction representing aerated lung. The general impression gained from these densities was that of fibrosis. There were 11 patients in the nodular group. The nodules were characterized by rather homogeneous, soft tissue densities varying from several centimeters in diameter to very large masses. The borders in some cases were sharply defined, but in others they were irregular with extension of fine projections into the adjacent tissues. The large lobulated masses were apparently due to coalescence of multiple smaller areas. A definite diagnosis of lipid pneumonia could not be established from the roentgen appearance alone. Bronchography was performed in 12 patients, and the most common finding was obstruction of the terminal bronchi in the involved area. Both lungs were involved in 21 patients, and of the 14 with unilateral involvement, the disease was on the right side in 12 and on the left side in 2. The nodular areas were usually single, but multiple areas were not uncommon and different lobes were involved. Nine of the 35 patients were operated on for lesions that simulated tumor, and autopsies were performed on all 10 patients who died of the disease. In these patients the diagnosis of lipid pneumonia was proved by the visualization of large amounts of oil in tissue sections. The nodular and diffuse types of lipid pneumonia were quite similar histopathologically. In the early phase of the disease most of the alveolar lining cells were cuboidal and the alveoli contained partially phagocytosed oil. In the late stages, large segments of functioning lung were replaced by fibrous tissue containing aggregates of lymphocytes, small oil droplets, and scattered plasma cells. Most of the alveoli had disappeared. The diagnosis of lipid pneumonia in the living patients was made on the basis of a history of oil ingestion, consistent roentgenographic findings, and the presence of intracellular oil in the sputum. No therapeutic measures are known for the removal of significant amounts of intra-alveolar oil. Patients who develop symptoms should be advised to stop medication. Three of the authors' patients improved clinically after discontinuance of oily medication. The best treatment is prevention.

Etiology of Esophageal Carcinoma. J. Mosbech and A. Videbaek. J. Nat. Cancer Inst. 15:1665-1673 (June) 1955 [Washington, D. C.].

Of 169 patients with esophageal carcinoma, 68 were unsuitable for inclusion in this analysis because of uncertain diagnosis or inadequate family histories. The remaining 101 patients included 83 men and 18 women. The investigation did not reveal a greater number of cancers of the esophagus or of other sites among the relatives of patients with esophageal cancer than among the relatives of normal controls. The study thus failed to show any influence of hereditary factors. Consequently cancer of the esophagus seems to be chiefly due to exogenous factors. The marked preponderance of men suggests that men are more exposed to the exogenous carcinogenic action. Abuse of alcohol seems to be an important causal factor in esophageal carcinoma, at least in men. Sixty-five per cent of the patients had been alcohol addicts, and 21% had been exposed to alcohol

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The place of publication of the periodicals appears in brackets preceding each abstract.

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in their occupations. The incidence of syphilis was not greater in the patients with esophageal cancer, and none had sideropenic dysphagia. Data on eating habits were inadequate to provide conclusive evidence that eating hot food could be a causal factor in esophageal cancer.

The Tuberculosis Patient Who Leaves Against Medical Advice from the San Francisco City and County Hospital. H. A. Wilmer. Dis. Chest **27**:597-623 (June) 1955 [Chicago].

Of 751 patients with tuberculosis who were discharged from the tuberculosis department of the San Francisco City and County Hospital in 1952, 520 were discharged regularly, and 231 (30.7%) left against medical advice. Of these, 131 (17.4%) signed a release, 82 (10.9%) went absent without leave (AWOL), and 18 (2.4%) were disciplinary discharges. Seventy-four of the 231 patients were compared statistically with 69 control patients in an attempt to define what characterizes the self-discharge group from medical and social viewpoints. Most of the self-discharge patients had far-advanced tuberculosis but most of the control patients did not. There was no sex difference between the total number of self-discharge patients and the total number of control patients. The female self-discharge patients had a significantly greater incidence of positive sputum than the male self-discharge patients. The male AWOL patients had a significantly greater incidence of positive sputum than the female AWOL patients. There was a highly significant increase in the extent of the disease among readmitted self-discharge patients compared with all first admissions. Most of the self-discharge patients left the hospital within six months. Most of the AWOL patients stayed less than three months. Most of the patients who signed a release stayed more than three months. The self-discharge patients left sooner than the controls. There was a decrease in number of self-discharges during the summer months, which was statistically significant. Most of the self-discharge patients were separated or divorced, but most of the control patients were married. This was highly significant statistically. A history of alcoholism was obtained three times more often in the self-discharge patients as compared with the controls. In the AWOL patients the alcoholics predominated, while in those who signed a release the nonalcoholics predominated. These too were significant differences. It is estimated that the cost of hospitalization to the city, county, and state for 184 self-discharge patients of the tuberculosis department was $217,375. In their projected cost based on readmission figures it was estimated that the self-discharge group over a five year period represents a financial liability in excess of $1,250,000. If the self-discharge group were reduced by one-fourth, the savings in hospitalization would amount to $54,343 a year, or over $250,000 in five years. If it were possible to define the patient population at risk from the standpoint of self-discharge, it would be possible to compare the changes in risk factors over a period of time and in relation to adjustment of program. The lack of statistical controls of such an important part of the tuberculosis program should spur students of the problem to extensive studies.

Incidence of Postvaccinal Encephalitis After Subcutaneous Vaccination Against Smallpox in Persons of Various Age Groups Vaccinated for First Time. K. Berger and F. Puntigam. Wiener med. Wchnschr. **105**:405-408 (May 21) 1955 (In German) [Vienna, Austria].

The Austrian federal law concerning vaccination against smallpox, which was enacted in 1948, permits the use of the subcutaneous and intracutaneous vaccination techniques besides the cutaneous method. Of 404,524 first vaccinations that were successfully performed between 1949 and 1953 only 5,001 were performed subcutaneously and 733 intracutaneously. The authors used the subcutaneous technique, which has several advantages over the cutaneous technique: secondary infections of the vaccination area do not occur, there is much less risk of secondary or transmitted vaccinia, the resulting vaccinia runs a milder course, care of the vaccinated persons is simpler, and no disfiguring scars are produced; but the subcutaneous technique has the disadvantage that the immunity produced lasts only four to six years. About 10,000 subcutaneous vaccinations were performed up to the end of 1953. Of these, five led to postvaccinal encephalitis that was fatal in two patients. All five patients were over 3 years of age. The risk of encephalitis in patients over 3 years of age who were vaccinated subcutaneously was significantly greater than that in persons under 3 years of age vaccinated cutaneously or subcutaneously. The authors caution against the use of the subcutaneous method for first vaccination against smallpox in children over 3 years of age as well as against first vaccination by the cutaneous method in children beyond this age limit. The subcutaneous technique is less suitable for general vaccination because of its reduced immunizing effect. It should be used only in single cases in which for some reason it appears desirable to place a lesser burden on the vaccinated person, and subsequent cutaneous vaccination should be recommended in these cases.

Psychologic Barriers to Rehabilitation of Cancer Patients. A. M. Sutherland. Postgrad. Med. **17**:523-526 (June) 1955 [Minneapolis].

Rehabilitation is the process by which the survivor of an experience damaging to body or mind is restored as closely as possible to his previous level of activities. It is not generally recognized that unsuccessful attempts at rehabilitation of the cancer survivor are more often due to his own psychological and emotional problems than to physical and environmental factors. Most survivors are physically able to resume their usual occupations or activities. There are many little adjustments to be made in the patient's lifework, recreation, and marriage. Levels of activity in these areas do not necessarily fluctuate together. One man returns to work at approximately his preoperative level but restricts social or sexual activities. Another is forced to work full time, but he does so only at the cost of increased anxiety and the development of conversion phenomena and physiological disturbances. Another shifts his employment to a less demanding job. When work is restricted for other than physical reasons, two main sources can usually be identified: (1) hypochondriacal notions of body injury and fragility, and (2) fears of unacceptability to others. The sense of body injury is supported by misconceptions of the physiological role of the sacrificed organ in the intact body. A number of patients who have undergone a colostomy state that the loss of the rectum must inevitably affect their digestive or absorptive powers, or that irrigation washes out nourishment as well as feces. Loss of the uterus and menstruation, with or without oophorectomy, may be thought to herald old age and depleted vitality. Restriction in social contacts is frequently due to a sense of unacceptability to others who are not expected to accept the change in form, as after mastectomy, or the possibility of uncontrolled function, such as occurs after colostomy. Patients who have undergone a total gastrectomy fear that intestinal hypermotility may be audible or cause embarrassing symptoms. Decreases in sexual activity may also be expressive of emotional disruptions. In men, it may follow operations on sites far removed from the genital tract, such as thoracotomy or laryngectomy. The man usually regards this activity as too taxing. Sexual restriction in women may be associated with fears of injury and with hypochondriasis. Paranoid reactions, sometimes frankly delusional, are serious barriers to rehabilitation. They are commonly directed against the physician or other medical personnel and are very resistant to treatment. The patient's spouse may greatly help or hinder rehabilitation, and a good patient-physician relationship is the best guarantee against the development of crippling beliefs and their expression in unnecessary restriction of activities.

Treatment of Iron Deficiency Anemia. D. H. Coleman, A. R. Stevens Jr. and C. A. Finch. Blood **10**:567-581 (June) 1955 [New York].

In the normal person the amount of iron absorbed by and lost from the body is exceedingly small. There are certain periods during life, i. e., infancy, adolescence, and pregnancy, when body iron requirements are increased; the most important of these is infancy. Here, existing iron stores are rapidly depleted, and a deficient diet can soon produce iron deficiency. Once a full complement of body iron has been accrued, the adult is independent of iron intake and becomes iron deficient only through blood loss. In the production of iron deficiency, iron stores are exhausted before anemia appears. If any question in diagnosis from usual laboratory tests exists, the direct examination of marrow for hemosiderin will establish the diagnosis. It is of obvious importance to confirm the diagnosis by specific therapy and to determine the cause of the iron depletion. Response to orally given iron therapy is highly predictable; failure of response usually indicates a mistaken diagnosis. In a small but significant group of patients unable to take iron because of gastrointestinal symptoms, unable to absorb iron, or in need of iron reserves parenteral administration has distinct advantages. The saccharated oxide of iron is an effective preparation for this purpose.

"Coughing Disease," Equivalent of Allergy: Its Significance in Practice; Preliminary Information. E. B. Salén. Acta allergol. 8:228-230 (No. 3) 1955 (In French) [Copenhagen, Denmark].

Coughing and throat-clearing occurring early in the morning and lasting until the patient gets up was noted in 11 patients. It is more disturbing to those around him than to the patient himself, as shown by the fact that the wives of two of the patients in this series threatened divorce. The disorder appears to have an allergic basis, but the sensitizing agent is difficult to discover. In two instances it was proved to be house dust. Coughing disease seems to be endemic to the northern countries; the author believes it is a preliminary form of asthma activated by climatic factors. Eosinophilia has been found in some patients. The patient's general condition is good except for some insomnia, and there are no physical signs of asthma or bronchitis. No case has as yet progressed to asthma. Total suppression of symptoms was obtained in the two patients mentioned above by strict elimination of house dust and nonspecific antiallergic therapy with allergol.

SURGERY

Vagotomy, Hemigastrectomy and Gastroduodenostomy (Finney-Von Haberer) in the Treatment of Duodenal Ulcer. R. J. Coffey and E. J. Lazaro. Ann. Surg. 141:862-871 (June) 1955 [Philadelphia].

To evaluate the relative resistance to experimentally produced peptic ulcers of hemigastrectomy with and without vagotomy and with both gastrojejunal and gastroduodenal anastomoses, experiments were carried out in adult dogs. Results indicated a high resistance of the animals that had undergone hemigastrectomy and gastroduodenal anastomosis to the ulcer-provoking influence of histamine in beeswax. The relative vulnerability of a gastrojejunal anastomosis after hemigastrectomy became clearly apparent. Interruption of the vagus nerves conspicuously lessened the incidence of histamine-provoked ulceration, while preservation of the excluded gastric antrum and diversion of the alkaline bile and pancreatic juice away from the duodenum increased the incidence of experimentally produced peptic ulcers. Vagotomy combined with hemigastrectomy and end-to-side gastroduodenostomy was employed as a routine procedure in the surgical treatment of 80 patients with duodenal ulcer. Fifty-five of the 80 patients were followed postoperatively for a sufficiently long period to justify a preliminary report of the results. The pH of the gastric juice varied between 4.5 and 7 postoperatively, and free hydrochloric acid was absent in all but one patient. In one patient, in whom incomplete vagotomy was shown, a pH of 2 and free hydrochloric acid of 70% was present. The appetite was stated to be excellent or good in 48 patients and only fair in 7. Seven patients continued to consume a bland diet, but the remainder consumed an unrestricted diet. Of the 12 patients whose preoperative weight was below ideal, 11 had gained weight postoperatively to a level of or beyond their ideal weight. Of the 42 patients whose preoperative weight was above ideal, only three were below ideal weight postoperatively, but in the remaining patients the postoperative weight remained above ideal. Not one of the patients died. Gastric retention, necessitating a feeding jejunostomy, occurred in a single patient. Postoperative hemorrhage required reoperation in only one patient. Secondary closure with the aid of anesthesia was required in two patients with dehiscence of the abdominal wound and hemorrhage. Mild wound infection occurred in two patients. Phlebothrombosis of the left leg occurring in one patient responded promptly to anticoagulant therapy. A recurrent duodenal ulcer developed in a single patient. A mild dumping syndrome occurred in four patients, persisting for one to four months in three patients and for two years in one. A severe dumping syndrome persisted for 20 months in a single patient. Mild intermittent diarrhea occurred in five patients, dysphagia in two. A hemoglobin level less than 12 gm. per 100 cc. was observed in only one patient. Both experimental studies and the follow-up in the authors' 55 patients revealed certain conspicuous advantages of the combined procedure of vagotomy, hemigastrectomy, and end-to-side gastroduodenostomy in the treatment of duodenal ulcer.

A Critical Evaluation of Radical Subtotal Gastric Resection as a Definite Procedure for Antral Gastric Carcinoma. H. W. Mayo Jr., J. K. Owens and M. Weinberg. Ann. Surg. 141:830-839 (June) 1955 [Philadelphia].

Of 194 patients in whom a diagnosis of carcinoma of the stomach was made between 1940 and 1953, 64 were not operated on, 77 underwent operations other than resection of the stomach, and 53 had resections of the stomach. In 22 of the 53 patients, the resections were classified as curative; this classification was made if the lesion was limited to the stomach and the immediately adjacent regional lymph nodes, if there was no invasion of adjacent organs or evidence of distant metastases, and if there was no evidence that tumor tissue had been left behind at the operation. In the remaining 31 patients who had resections classified as palliative procedures, 4 had scirrhous carcinoma, 3 acute free perforations, 3 distant metastases or irremovable involved lymph nodes, and 21 involvement of adjacent organs. In 129 of the 194 patients in whom a diagnosis of carcinoma of the stomach was made, this was done five or more years before the authors' study was made. Ten of these patients survived five years or more, an over-all survival rate of 8%. Of the 53 patients who underwent resections, 20 (39%) survived for five years. Ten (67%) of the 15 patients in whom no lymph node involvement was shown survived five years or more; in 9 of these 10 patients the lesion was in the antrum. None of the 11 patients with lesions of the antrum in whom lymph node involvement was shown survived for five years. Radical subtotal gastric resection, as presently employed, appears to be inadequate to save the lives of those patients with antral carcinoma that has already metastasized to the regional lymph nodes. In view of the sites of metastasis and recurrence noted in the authors' study and in the studies made by other workers, total gastrectomy appears to have little to offer for these patients. Consequently, the procedure originally proposed by Harvey, which combines pancreaticoduodenectomy with radical subtotal gastric resection, is suggested as a possible approach in an effort to increase the survival rate of patients with antral carcinoma with lymph node metastases.

Surgical Experiences with 316 Duodenal and Marginal Gastric Ulcers. R. M. Bolman and R. P. Lloyd. A. M. A. Arch. Surg. 70:833-842 (June) 1955 [Chicago].

The authors present their experiences in 341 operations on 316 patients with duodenal and marginal gastric ulcers. The only marginal gastric ulcers considered here are those for which they themselves had performed the original operation. Gastroenterostomy and vagotomy was performed in 216 patients. Eleven of these had recurrences, all of whom were relieved by gastric resection. There were no deaths in this group. A second group of 12 patients was subjected to transthoracic vagotomy alone as definitive treatment for duodenal ulcer. These patients all had their primary operations in 1946. Seven of the 12 were subsequently treated by gastroenterostomy, because of gastric stasis, vomiting, and fulness. Gastric resection, colon resection, and repair were performed on one patient in whom a marginal ulcer with gastrojejunocolic fistula developed after vagotomy. Two of the vagotomy group have mild stasis symptoms not justifying additional surgery. No deaths occurred in this group. The third group of 88 patients were treated by conservative (50%) gastric resection and vagotomy. There have been no recurrences and no deaths in this group. Surgical opinion is still rather sharply divided between radical resection on the one side and vagotomy on the other. The authors themselves performed 112 high gastric resections with six deaths during the period when the aforementioned 316 patients were treated (without mortality) by vagotomy in combination with other measures. They believe that either high gastric resection alone or vagotomy and a drainage operation is inadequate surgical therapy. Since recurrences following resection depend on the presence of intact vagi and recurrences following vagotomy depend on the presence of the antrum, conservative (50%) gastric resection combined with vagotomy seems to be the operation of choice in the treatment of the duodenal ulcer diathesis.

Subtotal Gastric Resection with Colon Substitution: Reconstruction of a Neostomach Utilizing the Transverse Colon. D. H. Watkins and G. Wittenstein. A. M. A. Arch. Surg. 70:843-858 (June) 1955 [Chicago].

Seven patients had subtotal gastrectomy, and restoration of continuity was accomplished by the intercalation of a segment of transverse colon between the gastric remnant and the duodenum. Subtotal gastric resection (in the patients with duodenal ulcer) of 75 to 80% is an essential preliminary step to decreasing the gastric hypersecretion. The use of a segment of transverse colon makes possible a Billroth 1 type of reconstruction subsequent to gastric resection. The segment of transverse colon is ideally adapted anatomically to restore the crop function of the stomach. Food is held in the neostomach and delivered slowly to the duodenum. The immediate results suggest that the preservation of total duodenal function as an active factor in digestion is worth while. The result of the interposition of a segment of colon between the remaining gastric remnant, or, in the case of a total gastrectomy, between the esophagus and the duodenum, is that bile and the alkaline secretions of the upper small intestine are prevented from retrograde inundation of the lower esophagus to produce an alkaline esophagitis. This plan of using the transverse colon appears to be more circumspect than the use of a free loop of jejunum because of the susceptibility of jejunal mucosa to peptic digestion. The patient should be allowed up the evening of the day of operation, and the diet should begin with semisolid food, liquids being withheld until after the completion of the solid portion of the meal. Alimentation may begin as soon as flatus is passed by rectum. Many patients have symptoms of gastric delay or atony, which diminish gradually over the first three postoperative months. These symptoms usually appear as complaints of epigastric fulness and discomfort in the left upper quadrant, which improves spontaneously half an hour to an hour after the ingestion of the meal. Many patients find that they are unable to take cold liquids without precipitating epigastric cramps. In most patients the immediate postoperative status is improved by giving belladonna and other antispasmodics. No instances of the postgastrectomy "dumping" syndrome have been encountered.

Observations on the Surgical Physiology of the Human Liver Pertinent to Radical Partial Hepatectomy for Neoplasm. A. Brunschwig. Cancer 8:459-467 (May-June) 1955 [Philadelphia].

In some 50 excisional operations for primary and secondary hepatic neoplasms the author observed certain aspects of the surgical physiology of the liver that are pertinent to the excisional procedures that may be performed on this organ. In commenting on the question as to how much human liver may be resected he shows that hepatic tissue equivalent in size to a left lobe must be retained to ensure physiological function adequate for survival. Hepatic function tests are of limited significance in indicating physiological fitness for survival after partial hepatectomies. The essential independence of each hepatic lobe is demonstrated on the basis of a case history, in which it was shown that the liver is at least a major bilobed organ (there are smaller lobes) and that anatomic separation of each of the two lobes was all but accomplished without apparent hepatic disturbance or atrophy of one or the other of the separated lobes. That survival ensued further corroborated previous observations that one or the other of the major lobes may be resected with survival of the patient. The author believes that, while hyperplasia of hepatic parenchyma is possible in man, it occurs only on physiological demand and that the size of a mass of hepatic tissue does not indicate its physiological effectiveness. A gradual replacement of more than half the hepatic parenchyma by tumor results in a gradual shift of physiological load to the remaining uninvolved parenchyma. If this shift is slow, the remaining hepatic tissue can accommodate to the increased physiological demands without hyperplasia. Prior to major excisional surgery for hepatic neoplasms, a permanent reduction in vascularity of the liver compatible with life would, if feasible, have certain advantages, because hemorrhage is the most important immediate complication of such operations. Since gradual occlusion of the hepatic artery and of the portal vein have been shown to be feasible in the experimental animal, and gradual occlusion of the portal vein compatible with survival in man, the question arises whether or not gradual to complete occlusion of both these vessels with or without their definitive excision would possibly be followed by survival in man. An opportunity to observe this possibility presented itself in one patient whose history is presented. Failure of this patient to survive indicates that, in the absence of sufficient collaterals, simultaneous permanent occlusion and then resection of both portal vein and hepatic artery in the porta hepatis does not permit survival even though the preliminary occlusion of each was gradual. The multiple procedures necessary to devascularize the liver markedly are too complex for clinical application to man.

Surgical Treatment of Cancer of Colon: Report of Twelve Cases. R. Muñoz Kapellmann. Rev. invest. clín. 7:91-100 (Jan.-March) 1955 (In Spanish) [Mexico, D. F., Mexico].

Cancer of the colon requires early surgical treatment, consisting of resection of the tumor with ample resection of intestinal segments on both sides of the tumor, and of the portion of the mesocolon having metastases or the potentiality to metastasize. Extension of resection in cases of diffusion of cancer to nearby organs and structures depends on the site of the tumor in the ascending, transverse, or descending segments of the colon or in the hepatic or splenic curvatures. A primary anastomosis between the ileum and the transverse segment of the colon is feasible in resecting carcinomas of the right colon. Carcinomas of the descending segment of the colon should be resected in two-stage operations, with Mikulicz's modified technique and reestablishment of the intestinal lumen in the second stage of the operation. A palliative operation for resection of an obstructed segment of the colon is indicated in cases of nonremovable carcinoma causing acute occlusion. Resection is followed by direct anastomosis if feasible or else by permanent colostomy if direct anastomosis is not feasible. Fifteen patients were observed by the author between 1946 and 1953 in the Hospital de Enfermedades de la Nutrición of Mexico, D. F. Nine patients had a radical operation and three a palliative operation. Carcinoma was located in the right segment of the colon in five cases, in the transverse segment in one case, and in the descending segment in six. Nine patients had metastases. Two patients died in the postoperative period, from rupture of the suture in one case and an acute cardiovascular complication in the other. The remaining patients are well. Although the follow-up period is too short to allow conclusions, according to the literature the expectancy of survival after a radical operation for cancer of the colon is over three years in 32% of the cases and over five years in 25%.

NEUROLOGY & PSYCHIATRY

Electroshock Therapy in Patients over 60 Years. L. Michaux and A. Grasset. Rev. prat. 5:1531-1533 (May 21) 1955 (In French) [Paris, France].

The authors do not believe that advanced age is in itself a contraindication to electroconvulsive therapy. In 60 patients over 60 years of age, 478 sessions of electroshock therapy were administered. The only incident was an acromiocoracoid subluxation in a man of 65. The oldest patient was 84 years old. Advanced age is an indication for the exercise of special care in performing the examinations preliminary to electroshock therapy, especially as regards the circulatory system. Precautions must be taken before the period of convulsions against vertebral fractures due to spinal flexion. Oxygen is often administered to shorten the anoxic period after convulsions, and always to patients whose cardiovascular status is not perfect. In especially anxious patients electroshock is given under penthiobarbital narcosis. Electroshock therapy under curare is especially useful in hypertensive patients. Experience has shown that electroconvulsive therapy acts more rapidly on depressive syndromes in older patients than on those in younger ones. It seems that the more it impairs memory function the more effective it is. Involution melancholia is benefited more than cyclic melancholia; there too calming of anxiety is accompanied by rapid and deep perturbations in memory. Results in involution melancholia are purely temporary. The parallel action of electroconvulsive therapy on anxiety and memory probably indicates a causal relationship between these two. Shock therapy acts more rapidly in elderly persons because their memory is more fragile and can be more readily altered. Thus electroconvulsive therapy can be considered a method of cure or sedation by amnesia.

Effect of Prefrontal Interventions (Leukotomy, Topectomy) on the Psychic and Kinetic Manifestations of the Parkinsonian Syndrome. C. Gros, B. Vlahovitch and J. M. Enjalbert. Semaine hôp. Paris **31**:1831-1832 (May 26) 1955 (In French) [Paris, France].

Strong psychosomatic elements were present in two cases of paralysis agitans, in which the patients were benefited greatly by psychosurgery (bilateral prefrontal lobotomy in one and topectomy of areas 9 to 12 in the other). The operations affected both the mental state and the physical manifestations. The use of such operations should be limited to patients in whom psychic symptoms are prominent and the commoner forms of therapy of paralysis agitans are unsuccessful. Spiegel and Wycis were unable to ameliorate the condition of patients with pure dyskinesias by destruction of the dorsomedian nucleus. The specific mode of action of prefrontal intervention is not known.

Chlorpromazine Treatment of Mental Disorders. V. Kinross-Wright. Am. J. Psychiat. **111**:907-912 (June) 1955 [Baltimore].

An unselected group of patients admitted to the psychiatric service of a general hospital, and a lesser number of outpatients, 95 in all, were treated with chlorpromazine. Most of the patients received initially a minimum of 50 mg. of chlorpromazine intramuscularly four times daily. It is usually possible to switch to oral administration after a few days. Intramuscular administration is often painful and produces induration at the site of injection, particularly if the solution escapes into fatty tissue. The total daily amount of chlorpromazine may be increased by as much as 100 mg. until the optimum effect is achieved. Increasing familiarity with the effects of the drug has led to the use of larger doses. The average therapeutic dose for psychotic patients is about 800 mg. each 24 hours. In neurotic patients and in children treatment is started by the oral route and in doses as low as 30 mg. daily. Once improvement was manifested mediation was given only orally and progressively reduced over a eriod of weeks. In a few patients who showed a tendency to relapse larger doses were again given. Remission was obtained in 32 patients, great improvement in 36, slight improvement in 18, and no improvement in 9. Many patients were given maintenance doses of chlorpromazine on an outpatient basis and continued to improve. Chlorpromazine has low toxicity, even in large doses. It appears to be highly effective for controlling psychomotor excitement of all kinds without the undesirable effects of the standard methods and in maintaining the patient in a fairly accessible state at all times. Its action on other types of mental illness is not so remarkable but is worthy of further investigation, particularly in the chronic schizophrenic patients in whom most treatments are unrewarding. Facilitation of communication has occurred in many of this group. Speculation about the mode and site of action of the drug seems premature but evidence suggests that it is a subcortical one. Although in the initial states of treatment there is a resemblance in the behavior of these patients to those who have been lobotomized, there are none of the disadvantages found as a result of lobotomy.

GYNECOLOGY & OBSTETRICS

The Effect of Promethazine in Nausea and Vomiting of Pregnancy. J. P. B. Fitzgerald. New Zealand M. J. 54:215-218 (April) 1955 [Wellington, New Zealand].

To determine the incidence of nausea and vomiting, 254 antenatal clinic patients were interviewed. Consecutive cases, where the gestation had reached 24 to 32 weeks, were selected. Questioning was directed to find out whether nausea and vomiting had or had not been present. Of the entire group, 155 (61%) suffered from vomiting. Primigravidas were affected more often than multigravidas, 65.1 and 56.8% respectively. Most patients had taken some form of self-medication; none had received treatment from the antenatal clinic. Alternate patients were treated with Phenergan (promethazine hydrochloride), in a dosage of 25 to 50 mg. twice daily, and ascorbic acid tablets, 25 mg. twice daily. This latter substance was chosen since, as far as is known, it is inert as far as vomiting is concerned. Both forms of tablets were given for 14 days before the effect was assessed. Most patients were seen seven days after the start of treatment and some sooner. The effects were most striking in the mild cases. Of 22 such patients given promethazine, 20 said the vomiting had ceased, while of 25 given ascorbic acid only 6 said they were cured. In the group affected moderately, 23 out of 25 of the treated patients and 9 of 27 of the control group were cured or improved. In the severe group, 9 of 11 treated patients were improved or cured, but only 1 in 4 of the control group was. Of the 58 cases in the treated group 41 were cured, 11 improved, and 6 were unaffected. In the 56 controls 13 were cured, 3 improved, and 40 unaffected. These results show that promethazine has therapeutic value in vomiting of pregnancy. Discussing the possible causes of nausea and vomiting in early pregnancy and the mode of action of antihistaminic drugs, the author points out that recent work with chlorpromazine, a homologue of promethazine, has shown it to be a drug with only moderate antihistaminic qualities, but it has a depressant effect at the cortical and hypothalamic levels. Thus chlorpromazine produces emotional indifference and reduces emotional tension. It may be possible that promethazine exerts its beneficial effect on nausea and vomiting in the same way as chlorpromazine, as a central depressant rather than as an antihistaminic.

Tubal Pregnancy: Report of 37 Cases Seen from 1951 to August, 1954. C. Ouimet. Union méd. Canada 84:659-668 (June) 1955 (In French) [Montreal, Canada].

The author has noted an increase in the frequency of tubal pregnancies within the last decade. He attributes this to the use of antibiotics in the treatment of chronic pelvic inflammatory disease. Whereas in the past a patient was considered sterile after bilateral salpingitis, modern treatment has enabled such a patient to become pregnant. Although antibiotic therapy controls tubal infections, it does not restore the tubal mucosa to normal. Some inflammatory lesions remain that could alter the epithelium and produce changes in ciliary activity, causing tubal pregnancy by abnormal migration of the ovum. Of the 37 patients reported on by the author, 11 definitely had inflammatory lesions from previous salpingitis; others might well have been revealed by proper histological investigations. The diagnosis of tubal pregnancy must be made clinically; laboratory tests have only a relative value in the diagnosis. There are many variants in the clinical findings, leading to deviations from the classic description. For instance, eight (23%) patients in the present series had no history of delayed menstruation, vaginal bleeding (present in 85%) was not necessarily of a blackish color, and pain was sometimes dull rather than knife-like. Twenty-one of the pregnancies were ruptured and sequestered, nine were ruptured and constituted emergencies, and seven (two emergencies) were intact. Thirty-one patients were treated by salpingectomy and six by salpingectomy with ovariectomy. Salpingotomy is reserved for intact tubal pregnancy detected at the very beginning in a patient who has never had children and desires them, if the remainder of the tube is normal and the one on the opposite side is blocked. In this series the author also performed 15 appendectomies, 7 curettages, and 3 colpotomies. There were no deaths.

Pain Associated with Uterine Contractions During the Period of Cervical Dilatation. H. Pigeaud. J. méd. Lyon 36:421-426 (June 5) 1955 (In French) [Lyon, France].

There are two types of pain associated with uterine contractions during cervical dilatation, one physiological and the other pathological. The second type is commonly seen in women, especially primiparas, who are afraid of childbirth and are in a nervous, overexcited state. These pains are severe and have their severe character from the beginning of labor; they do not disappear during the period between contractions; and they occur in the lumbosacral region, which makes them difficult to tolerate. Cramps and muscular spasm are a prominent feature. In these cases, dilatation of the cervix progresses poorly. Such a pattern of pain constitutes a pathological event, since the course of delivery as well as the welfare of the parturient is influenced. There are two avenues of approach to the therapy of this condition: the combination of medical and obstetric techniques acting on uterine contractility known as "directed delivery" and prophylactic or curative analgesia acting on the nervous system and the routes of transmission of pain.

Maternal Factors That Influence the Severity of Erythroblastosis Fetalis. H. L. Teate Jr. Obst. & Gynec. 5:819-825 (June) 1955 [New York].

About 300 pregnant women were sensitized to Rh antigens. It was found that abortions, erythroblastotic infants, and transfusion of Rh-positive blood are strong immunizing agents. Abortions were found to be stronger immunizing agents than normal pregnancies but not as strong as erythroblastosis or Rh-positive transfusions. The mortality rate of liveborn erythroblastotic infants not treated with replacement transfusion whose mothers had a history of one or more of the strong immunizing agents varied between 31.8 and 39.1% depending on the agent. The untreated infants whose mothers had had only normal pregnancies had a mortality rate of 13.8%. With replacement transfusion the previous history made little difference. The rate of occurrence of fetal hydropic stillborn infants was only 3.6% when the previous maternal history was normal and 5.9% when abortions were included. With a history of previous erythroblastosis, the stillbirth rate was 26.1%; it was 21% when all the strong immunizing agents were included in one group. In spite of these findings, the author saw 45 mothers who had previously had affected infants and subsequently gave birth to Rh-positive infants who were less severely affected. The mothers who had antibody studies during pregnancy were divided into two groups according to height of titer. In group 1 in which the titer was under 1:32 there was an incidence of 13.9% of severely affected liveborn infants, with a general mortality rate of 8.9%. Infants were stillborn in 8.9% of the total pregnancies. In group 2, with titers higher than 1:32, 43.2% were severely affected liveborn infants and the mortality rate was 27.2%. Stillborn infants occurred in 22.1% of total pregnancies. The mortality was low in both groups if replacement transfusions were performed. Serial antibody studies are of greater value the earlier in pregnancy they are performed. Titers that are negative or very low and progress to a low, moderate, or high level usually indicate erythroblastosis of mild, moderate, or severe degree respectively. It is a bad prognostic sign if the high titer drops at or near term. When the titer does not rise to a high level, a normal Rh-positive or Rh-negative infant may be born. A low, moderate, or high titer early in pregnancy that remains fairly constant or diminishes gradually usually indicates a normal Rh-negative fetus. It is never justifiable to discourage another pregnancy for a sensitized mother regardless of maternal history or antibody titer, provided the mother is willing to take the risk of stillbirth. If the infant is liveborn, it has an excellent chance of survival and neurological normalcy if adequately and immediately treated.

PEDIATRICS

A Clinical Pathological Study of the Newborn Lung with Hyaline-Like Membranes. E. F. Latham, R. E. L. Nesbitt Jr. and G. W. Anderson. Bull. Johns Hopkins Hosp. 96:173-198 (May) 1955 [Baltimore].

The lungs of newborn infants dying in the early neonatal period are often found to contain an eosinophilic membrane with a hyaline-like appearance lining the dilated alveoli and air ducts, and this is often associated with atelectasis of the remaining alveoli. At Johns Hopkins Hospital, 480 neonatal deaths occurred among 26,213 live births in the weight group of 1,000 gm. and over. The lungs of 407 of the 480 infants were available for autopsy. Histologically 124 (30.5%) were found to have pulmonary hyaline-like membranes. A further analysis revealed an incidence of this lesion per 1,000 live births of 3.7 in the 1,000 to 2,499 gm. group and 0.99 in the 2,500 gm. and over group. The liveborn infants that weighed between 400 and 999 gm. were omitted from this investigation, but in a study of these infants 13 of 52 demonstrated hyaline-like membranes. The opinion that hyaline-like membranes are not found in the lungs of stillborn infants was supported by this study in which no such membrane was found in the examination of the lungs of 563 stillbirths. The hyaline-like membranes were graded according to thickness and distribution. The percentage of atelectasis was estimated by a comparison of the areas of lung tissue to the area of alveolar spaces. The cases were further subdivided according to the grade of hyaline-like membrane and the percentage of atelectasis. The total incidence of hyaline-like membrane is 4.7 per 1,000 live births (over 1,000 gm.) without significant atelectasis, but when combined with at least 70% atelectasis the incidence falls to 2.4. The cases of hyaline-like membrane were associated with a higher than average incidence of such factors as prematurity (6.9 times higher), multiple pregnancy, and delivery by cesarean section (27% of total cases). There was an increased incidence of hyaline-like membranes also in the lungs of infants of diabetic mothers, particularly in those delivered by cesarean section. The infants with pulmonary hyaline-like membranes lived an average of 30 hours, and an inverse proportion between length of life and extent of membrane was found. In 70% or more of the cases in which the authors considered hyaline-like membranes to be the sole cause of death, there was an associated pulmonary atelectasis. These cases represented nearly 30% of the total group with hyaline-like membrane, but only 8.6% of the entire group of neonatal deaths. The presence of major pathological changes outside the lung confuses the problem of classification. The importance of the finding of a hyaline-like membrane in the infant lung is attested by the fact that about 25% of the infants who died in this series had the membrane to some degree. The finding goes hand in hand with prematurity, and both may have a common cause.

Neonatal Convulsions. A Minkowski, S. S.-A. Dargassies and D. Samson. Rev. prat. 5:1553-1561 (May 21) 1955 (In French) [Paris, France].

In 19 cases of neonatal convulsions out of 67 observed over a five-year period, 7 babies died. The two worst prognostic signs were early onset and, especially, long duration of the convulsive state. Favorable signs were: predominance of signs of meningeal irritation (rigidity, tremor) over signs of central nervous disorder (staring, lack of Moro reflex, respiratory disorders); cherry red color of the cerebrospinal fluid; rapid improvement in the general condition after one or two lumbar punctures; and improvement in the neurological state in less than four days. When the state of suffering lasts more than 24 hours treatment is urgently required. This should consist of repeated lumbar puncture and the administration of massive doses of chloral and gardenal.

Celiac Disease: The Relative Importance of Wheat Gluten. C. A. C. Ross, A. C. Frazer, J. M. French and others. Lancet 1:1087-1091 (May 28) 1955 [London, England].

Until recently steatorrhea was recognized as one of the most constant findings of celiac disease, but the steatorrhea of celiac disease was not clearly differentiated until Andersen in 1938 isolated fibrocystic disease of the pancreas as a separate entity, and showed that the steatorrhea in fibrocystic disease resulted from deficiency of pancreatic lipase. Celiac disease was more fully explained when Dicke, Weijers, and van de Kamer demonstrated in 1950 that children with celiac disease recovered when wheat and rye flours were excluded from their diets. Subsequently it was shown that the gluten fraction of wheat and of rye contained the harmful substance and that the starch fraction was harmless to these children. The studies reported here aimed to determine what proportion of children with celiac disease respond to a diet free from wheat gluten (rye is not a common food in Britain), and what caused the disorder in those children who did respond to a gluten-free diet. Of 30 children with active celiac disease all but 2 responded to diets free from wheat gluten. The main diagnostic criterion was chronic steatorrhea with normal pancreatic function and the main therapeutic criterion was disappearance of the steatorrhea. As all the children had been ill for several months before treatment, their recovery on the diet is strong evidence in favor of the causal relationship of wheat gluten to their illness. More precise evidence of this relationship was obtained by the reappearance of steatorrhea on reintroduction of wheat gluten into the diet of 12 of these 28 children. In the children who recovered on a wheat gluten-free diet improvement in fat absorption coincided with improvement in the chylomicrograph, standard weight for age, hemoglobin level, and diminution in the dilatation of the small intestine, but not with any significant improvement in the glucose tolerance test. Of the two children who did not respond to the diet, one appeared to have a deficiency of bile salts and the other child showed fat intolerance. The authors suggest the term "gluten-induced celiac disease" for the disorder in those children who recover on diets free from wheat gluten.

Wheat Germ in the Treatment of Prematurely Born Infants. H. Mannkopf. Kinderärztl. Praxis 23:193-197 (May) 1955 (In German) [Leipzig, Germany].

Wheat germ, which is removed from wheat flour by modern methods of milling, contains, in addition to the B_2 group hormones, vitamin E, unsaturated fatty acid (vitamin F), amino acids, minerals such as calcium phosphate and magnesium phosphate, diastase, amylase, lipase, phosphatase, and tyrosinase. Its most important hormone, vitamin E, has a favorable influence on capillary resistance and capillary permeability. Prematurely born infants are supposedly especially susceptible to the lack of vitamin E. In 1953 the author undertook a systematic study of the effect of ground wheat germ on prematurely born infants. After the infants had been maintained for 30 days on fresh human milk, they were gradually (in increments of 50 gm.) put on a formula of acidified whole milk. This formula was prepared from a whole milk powder that had a fat content of 2.5% with 5% ordinary sugar and 2% of a Zea mays (Indian corn) preparation. A mountain ash juice was used for acidification. In infants in whom the efficacy of wheat germ was to be tested, half of the 2% Indian corn preparation, that is 1% of the formula, was replaced by ground wheat germ. A total of 142 prematurely born infants was studied, of whom 71 received the wheat germ addition and 71 did not. The wheat germ addition had no harmful effect, and it did increase the weight of the infants. While it had no noticeable effect on the resistance to infection or on anemia, it did seem to reduce the incidence of rickets in the prematurely born infant.

Fractures of the Extremities in the Newborn. E. T. Madsen. Acta obst. et gynec. scandinav. 34:41-74 (No. 1) 1955 (In English) [Stockholm, Sweden].

Of 786 fractures of the extremities in 105,119 newborn infants, 726 were fractures of the clavicle and 60 were fractures of the long bones. Fractures of the clavicle occur, as a rule, in cephalic deliveries, and they usually affect the anterior shoulder. Prognosis is excellent, and treatment is unnecessary in most patients. Of the 60 fractures of the long bones, 37 were fractures of the humerus, 20 of the femur, and 3 of the tibia and fibula. Fractures of the humerus and of the femur most frequently occur as a result of obstetric maneuvers, whereas fractures of the leg are, as a rule, caused by congenital disturbances of ossification. The typical lesion of the humerus in the newborn infant is a transverse fracture in the middle of the shaft with marked angulation but never more than 1 cm. of shortening. The typical lesion of the femur is an oblique fracture in the upper third of the shaft with marked angulation and occasional shortening of up to 3 cm. Results depend on early and adequate treatment with frequent roentgenologic control. Follow-up examination of 26 patients with fractures of long bones at birth showed that the original site of the fracture was practically always roentgenologically detectable even after 30 years. Fractures of the humerus have an excellent prognosis, and for their treatment the U-shaped Spitzy splint is recommended. Fractures of the shaft of the femur are preferably treated by traction with the aid of the Watson-Jones suspension frame or a small Thomas splint to avoid permanent shortening and angulation that may result when Credé's method is used. The first two methods secure immobilization of the fragments in adequate position and make possible breast feeding, easy transport, and easy nursing. Congenital fractures (fractures in utero and most fractures of the leg) have an unfavorable prognosis and their treatment must be carried out in the orthopedic department.

OPHTHALMOLOGY

Unilateral Exophthalmos Due to Orbitofrontal Cholesterol Granuloma. J. W. Hanbry and M. Rayport. Am. J. Surg. 89:1144-1162 (June) 1955 [New York].

In nine patients with orbitofrontal cholesterol granuloma, two cases were recent and not previously reported, five were taken from the literature, one was seen by one of the authors and reported previously, and one was restudied from the files of the Montreal Neurological Institute. All lesions were solitary and occurred in young or middle-aged men. There was a definite history of trauma in two patients. Unilateral exophthalmos and diplopia were the commonest symptoms. Forward, inferior, and medial displacement of the eye with restriction of upward gaze were the most constant findings. In six patients there was a visible or palpable abnormality of the lateral portion of one supraorbital ridge. There was radiographic evidence of an osteolytic lesion in the lateral portion of one supraorbital ridge with involvement of the adjacent frontal squama, orbital roof, and zygomatic process of the frontal bone in all eight patients in whom roentgenograms were obtained. All patients were operated on, and in each a cavity filled with a soft, yellowish-brown, amorphous, gritty substance was found in the bone. There was compression of the orbital fascia in each instance. No invasion was demonstrated through the orbital fascia or frontal dura. The microscopic appearance in all cases was that of a granuloma containing large numbers of cholesterol crystal clefts, foreign body giant cells, foam cells, histiocytes with eosinophilic cytoplasm, inflammatory cells, blood pigment, and collagenous connective tissue. Local excision resulted in prompt recovery, and there has been no evidence of recurrence. A conservative surgical approach with curettage is therefore recommended for these patients. The cause and pathogenesis of this disease remain unknown. The lesions may be related to the histiocytic granulomas of the Schüller-Christian type, but conclusive evidence is lacking.

The Status of Lenticular Opacities Caused by Atomic Radiation: Hiroshima and Nagasaki, Japan, 1951-1953. R. M. Sinskey. Am. J. Ophth. 39:285-293 (March) 1955 [Chicago].

The discovery in 1949 of radiation cataracts in American physicists induced the Atomic Bomb Casualty Commission to study ocular injuries in the survivors of the Hiroshima and Nagasaki bomb explosions. Slitlamp and ophthalmoscopic studies were made on survivors with previously diagnosed radiation cataracts. Definite diagnostic criteria having thus been established, larger numbers of survivors and nonexposed persons were examined. One group consisted of survivors of the nuclear explosion giving a history of 90 to 100% epilation, that is, scalp hair fell out one to three months after the explosion. This was believed to be the most heavily irradiated group. The control group was not in Hiroshima during or shortly after the bombing. This study of 3,700 exposed and nonexposed persons indicates that the human lens is extremely sensitive to nuclear radiations. Subcapsular plaques that previously were interpreted as normal were shown by statistical analysis to be significant effects of nuclear radiations. There is evidence that morphological characteristics of radiation cataracts may be confused readily with lenticular opacities of other origins that occur primarily in the postsubcapsular region axially. The incidence of these posterior subcapsular plaques can be correlated with age, epilation, shielding, and distance from ground zero. Observations over a four year period revealed that the posterior subcapsular opacities either increased slowly or not at all. The loss of vision has been negligible so far. Although in most persons the lenticular opacities are so insignificant as to be invisible with the ophthalmoscope, they are important in terms of dosimetry. Significant lental changes are present in survivors without any other known early or late evidence of radiation damage. With the conversion of atomic energy to power production, many workers will be exposed to nuclear radiations. It is important to recognize the earliest signs of radiation injury for the protection of the employees.

Deformities and Rh Incompatibilities. U. Bork, W. Marget and H.-H. Unger. Ärztl. Wchnschr. **10**:481-484 (May 27) 1955 (In German) [Berlin, Germany].

A concurrence of eye deformities with Rh factor incompatibilities was observed in five children in the course of one year. With one exception, the mothers of these children still had Rh antibodies in their blood; the exception was a mother in whom more than a year had elapsed since delivery. The routine search for Rh incompatibility in children with defective development of the eyes is regarded as chiefly responsible for the discovery of these cases in a relatively short time. The demonstration of antibodies often suggested that hitherto unexplained defects could be traced to the same cause. The authors feel that the close cooperation between pediatricians, serologists, and ophthalmologists was largely responsible for the clarification of the reported cases, in that it revealed otherwise more or less obscure changes that proved decisive in the diagnosis. The following defects were observed. One child had a coloboma of the optic nerve. A second one had atrophy of the optic nerve with bilateral juxtapapillary atrophy of the choroid, coloboma of the macula as well as "pepper-and-salt" fundus. A third one had microphthalmus, and the other two children had lamellar cataract, which in one of them was associated with optic atrophy. The anamneses, except in one of these children, disclosed no other symptoms of Rh incompatibility, a fact that suggests that the manifestations of the incompatibility must have been limited to certain embryonal periods. Nevertheless, the authors hope that a search will be made for Rh incompatibilities in similar cases.

THERAPEUTICS

Clinical Experiences with New Intestinal Antiseptic. N. Lo Duca and F. Irato. Sett. med. **43**:38-40 (Jan. 31) 1955 (In Italian) [Florence, Italy].

Siosteran, 5-7-dichlor-8-oxyquinaldine, was used to treat 12 infants, 2 to 8 months of age, 25 adults with enterocolitis, and 8 patients with intestinal amebiasis. One 0.1 gm. tablet of the preparation was given to the infants daily in divided doses for five days, and the adults received three to four such tablets daily for six days. All the patients tolerated the drug well, and the results were excellent. The diarrhea improved markedly in the infants as well as in the adults within 24 hours, and restoration to normal occurred in two to four days. Tests revealed no alterations in the liver and kidney function of these patients, and the blood findings were not altered.

Therapeutic Agents in Rheumatic Carditis: Comparative Effects of Acetylsalicylic Acid, Corticotropin, and Cortisone. B. L. Stolzer, H. B. Houser and E. J. Clark. A. M. A. Arch. Int. Med. **95**:677-688 (May) 1955 [Chicago].

Stolzer and his associates treated 52 patients with acetylsalicylic acid, 38 patients with cortisone, and 38 patients with corticotropin. The patients were airmen, who met the standard diagnostic criteria, and who exhibited signs of rheumatic activity when the treatment was begun. The majority of these young adult males were experiencing their first attack of acute rheumatic fever. Treatment was started early in the course of their illness, over 50% of the patients being treated in the first week. In those treated with acetylsalicylic acid the daily dose never exceeded 9 gm. (150 grains). The patients received the drug during the first two days every four hours in daily dose of 60 mg. per pound of body weight, thereafter every six hours in daily dose of 40 mg. per pound of body weight. The dose of cortisone was 300 mg. the first day, 200 mg. for the following five days, and 100 mg. from the 6th to the 21st day, and thereafter the dose was reduced first to 75 and then to 50 mg. daily to the end of the sixth week. Corticotropin was used in the form of ACTHAR in a daily dose of 120 mg. for the first four days, 100 mg. from the fifth to the seventh days, and thereafter the daily dose was reduced by 20 mg. every week, so that during the sixth week the daily dose was 20 mg. Each drug was given for six weeks, but if three weeks after the cessation of treatment any patient still met the established criteria for rheumatic activity, retreatment was instituted for four weeks, with the same drug and dosage schedule. All patients received 3 gm. of potassium chloride orally each day during treatment and a diet containing less than 2 gm. of sodium per day for the first four weeks. In order to eradicate streptococci and to prevent new streptococcal infections each patient received penicillin, after which they were given sulfadiazine (1.0 to 1.5 gm. per day). The patients were kept at bed rest for at least nine weeks and were then allowed a gradually increasing activity. No one drug employed exhibited marked advantages over the others in the treatment of the acute manifestations of rheumatic fever. The fewest patients with murmurs were in the cortisone treated group, 18%, in contrast to 34% in patients treated with either acetylsalicylic acid or corticotropin. It seemed that cortisone prevented the appearance of apical systolic murmurs and caused the disappearance of existing apical systolic murmurs during the treatment period to a greater degree than either acetylsalicylic acid or corticotropin. This difference during therapy was reflected in the 14th-month evaluation. The seemingly favorable effect of cortisone was also evident when aortic diastolic and apical middiastolic murmurs were considered, although the numbers were small. The differences observed among the three treatment groups do not allow a definite conclusion as to whether cortisone and corticotropin are superior to acetylsalicylic acid in the prevention of rheumatic valvular heart damage.

Nitrofurantoin: Clinical and Laboratory Evaluation. B. A. Waisbren and W. Crowley. A. M. A. Arch. Int. Med. **95**:653-661 (May) 1955 [Chicago].

Waisbren and Crowley report laboratory and clinical studies on nitrofurantoin, a derivative of the nitrofurans with the chemical formula N-(5-nitro-2-furfurylidene)-1-aminohydantoin. In vitro studies of the antibacterial activity of nitrofurantoin revealed that it has a wide antibacterial spectrum, is relatively bactericidal, and does not readily invoke resistant mutants. Nitrofurantoin was found particularly effective against Micrococcus pyogenes and Proteus but was ineffective against Pseudomonas aeruginosa. Sixty patients with infection of the urinary tract were treated with nitrofurantoin. The results were satisfactory in 27 patients, unsatisfactory in 12, and indeterminate in 21. Fourteen of the 27 patients in whom treatment was effective had received prior unsuccessful therapy with antibiotics. These results were equal to or superior to those that would have been obtained with any other single antimicrobial agent. Nine patients had varying degrees of nausea and vomiting due to the nitrofurantoin, but no diarrhea or evidence of toxicity was found.

Treatment of Polyarthritis Chronica with Nitrogen-Mustard (Erasol). G. Retbøll, T. Egemose, and J. E. Holst. Acta med. scandinav. **151**:289-294 (No. 4) 1955 (In English) [Stockholm, Sweden].

Intravenous injections of nitrogen mustard (Erasol) were given to 12 patients between the ages of 37 and 60 years with chronic polyarthritis at the Town and County Hospital in

Roskilde, Denmark. The daily dose of the drug was 0.1 mg. per kilogram of body weight, and it was given as a rule for four consecutive days, and in one case for six days. The condition of all the patients improved in the course of the treatment, though in most of them only slightly. The improvement was of short duration. Most patients became sick and vomited a few hours after administration of Erasol although it was never considered necessary to discontinue the treatment, except in one patient for one day. Erasol cannot be recommended for use on a large scale, but only for giving brief relief to patients in whom other methods of treatment have failed.

Myleran (GT 41) in the Treatment of Leukemia. A. Videbæk. Acta med. scandinav. **151:**295-306 (No. 4) 1955 (In English) [Stockholm, Sweden].

Six adult patients and one 2-year-old boy with chronic myelocytic leukemia, one woman with myelosclerosis, one woman with acute myelocytic leukemia, and one man with subacute monocytic leukemia were treated with 1,4-dimethanesulfonyloxybutane (Myleran). The drug is available in tablets of 2 mg., and the initial dose given varied from 6 to 12 mg. daily in adult patients, while the child received 2 to 4 mg. of the drug daily. The drug was withdrawn or the dose reduced when the white blood cell count approached normal. Six patients received two courses of treatment. The follow-up period ranged from 2 to 16 months, averaging 8 months. The six adult patients with chronic myelocytic leukemia responded satisfactorily to the treatment and had remissions of two to eight months' duration. Normal white blood cell counts were obtained within one month on the average, but in one patient who received only 6 mg. of the drug daily, treatment had been continued for two to three months. The remissions were as good as those obtained by previous roentgenotherapy. The child with myelocytic leukemia had severe anemia during the first course of Myleran, but this patient had shown signs of hemolysis also before the treatment. He received two courses of Myleran and during both courses a marked decrease in leukocytes was observed. During the second course thrombocytopenia was also noted. The patient with myelosclerosis received 404 mg. of the drug in the course of 58 days; the treatment then had to be discontinued because of incipient pancytopenia. Fifteen months after discontinuation of the treatment the patient was still in a state of satisfactory remission and the originally enlarged spleen was not palpable. The drug was of little therapeutic value in the patients with acute myelocytic leukemia and subacute monocytic leukemia. Myleran is easy to administer and may be given even to outpatients, but the patients must be under careful hematological control. No immediate undesirable side-effects were observed.

Chemotherapy of Bacterial Infections Refractory to the Common Antibiotics. M. S. Bryer. Am. J. Med. **18:**782-791 (May) 1955 [New York].

Since the introduction and widespread use of antibiotics, organisms formerly considered semisaprophytes and minor pathogenic agents, such as Proteus vulgaris, Pseudomonas aeruginosa, coli-aerogenes, Micrococcus (Staphylococcus) aureus, and the enterococcus, have emerged as common causative agents of refractory infections. As the result of an extensive review of the literature including 126 papers, Bryer states that with proper precautions and careful observation, more toxic antibiotics such as polymyxin (Aerosporin), neomycin, and bacitracin may be successfully used in the treatment of these infections. Polymyxin is strongly bactericidal, and its activity is largely confined to gram-negative bacilli. It is effective against these organisms, with the striking exception of Proteus vulgaris, in extremely low concentration. Pronounced therapeutic activity with only minor toxic manifestations can be obtained with total daily intramuscular doses of 2 to 5 mg. of polymyxin per kilogram of body weight. In low concentration neomycin is markedly bactericidal for gram-negative organisms, and at slightly higher levels it is active against many gram-positive bacteria. Renal and also auditory reactions must be observed. When a total daily dose of 10 mg. per kilogram, or about 2,000 units per kilogram, is divided into four equal injections and administered intramuscularly in 1 or 2% procaine solution at six-hour intervals no difficulty is observed. Bacitracin is markedly bactericidal for gram-positive organisms. Serious toxic manifestations are uncommon when bacitracin dissolved in procaine is injected intramuscularly in a daily dose of 1,000 units per kilogram. This total daily dose is best given at six-hour intervals. In addition, erythromycin (Ilotycin and Erythrocin), carbomycin (Magnamycin), and nitrofurantoin (Furadantin) are more recent chemotherapeutic agents that are of some assistance in combating organisms resistant to the older antibiotics. Both erythromycin and carbomycin are of low toxicity and are active against gram-positive bacteria, rickettsias, and certain of the large viruses. Both antibiotics are usually well tolerated in total daily oral doses of 20 to 40 mg. per kilogram administered at four-hour or six-hour intervals. Nitrofurantoin is active against both gram-positive and gram-negative bacteria. The blood concentrations achieved with the usual daily dose of 5 to 10 mg. per kilogram are extremely low and limit this agent to the treatment of infections of the genitourinary tract since nitrofurantoin is excreted in high concentration in the urine. The successful treatment of a refractory bacterial infection depends on the early and proper evaluation of the diagnosis and the host factors involved as well as consideration of the chemotherapeutic and bacterial agents. The answer to eradication of these infections will most frequently be found in sound clinical judgment, application of long-established principles of general medical and surgical therapy, and in carefully standardized and controlled laboratory sensitivity determinations.

Experiences with Ossopan in Orthopedic Disorders. O. Popp. Helvet. chir. acta **22:**140-152 (May) 1955 (In German) [Basel, Switzerland].

Ossopan, a complete bone preparation made from crude long bones of young healthy animals, freed from fat, with epiphyses and red bone marrow, was given a therapeutic trial in 47 patients with various orthopedic disorders at the Orthopedic Hospital in Vienna, Austria. One tablet of the drug was given six times daily, and this dose was tolerated well even by small children. No undesirable side-effects were observed. The results obtained proved that Ossopan is a valuable aid in the treatment of bone defects. Patients with bone grafts, delayed healing of fractures, formation of pseudarthrosis, and transformation zones of bone, all were benefited from the administration of this drug. It stimulated recalcification in tuberculous processes as well as in Sudeck's syndrome. Ossopan also had a favorable effect on senile osteoporosis. Ossopan favors the absorption of calcium and its retention in the organism and in addition seems to exert an effect on the new growth of bone and on bone restitution.

The Treatment of Shigellosis: I. Synergistic Effect of Antibiotics on Shigella. H. Seneca and E. Bergendahl. Am. J. Digest. Dis. **22:**131-139 (May) 1955 [Fort Wayne, Ind.].

The effect of antibiotics on Flexner, Boyd, and Sonne strains of Shigella paradysenteriae using the tube dilution method, and the synergistic effect of antibiotics on Shigella paradysenteriae were studied. Results showed that neomycin combined with polymyxin (Aerosporin) in 1:10 ratio potentiates the inhibitory effect of neomycin and polymyxin on S. paradysenteriae 5 to 30-fold and 25 to 70-fold respectively. Neomycin combined with streptomycin in 1:10 ratio potentiates the inhibitory effect of neomycin and streptomycin on Shigella 1.5 to 2.5-fold and 2.5 to 3-fold respectively. Neomycin combined with tetracycline (Achromycin) or oxytetracycline (Terramycin) in 1:10 ratio potentiates the inhibitory effect of neomycin on Shigella 1.5 to 2.5-fold and 2.5 to 3-fold. Neomycin combined with carbomycin (Magnamycin) in 1:1,250 ratio enhances the inhibitory effect of neomycin 1.5 to 2.5-fold, and of carbomycin 0.5 to 8-fold, and in the same ratio, neomycin combined with bacitracin enhances the effect of neomycin 2.5 to 3-fold, and the effect of bacitracin one-fold to two-fold. Neomycin combined with viomycin in 1:10 ratio depresses the inhibitory effect of both antibiotics. In the treatment of shigellosis or other types of localized infections of the intestinal tract, the ideal therapeutic agent should have specific action on the causative agent, be nontoxic, permeate the intestinal wall adequately, and not be absorbed into the systemic circulation. Neomycin combined with polymyxin fulfills practically all of these requirements.

New Treatment of Barbiturate Intoxication. A. Shulman, F. H. Shaw, N. M. Cass and H. M. Whyte. Brit. M. J. 1:1238-1244 (May 21) 1955 [London, England].

The use of two new substances in the treatment of barbiturate poisoning in 41 patients is reported on. The agents are $\beta\beta$-methylethylglutarimide (NP13) and 2:4-diamino-5-phenylthiazole hydrobromide or hydrochloride (DAPT). In the 41 patients with pure barbiturate intoxication, of whom 9 were seriously ill, one death occurred. There was strong evidence that it was not caused by treatment, and the authors believe that their method warrants large-scale clinical trial. The merit of the method lies in the fact that the more active agent, NP13, unlike the central analeptics in current use, appears to exert a direct antagonism to the offending barbiturate and will readily restore the patient from a deep coma to a state of light anesthesia—the "safe state"—from which spontaneous recovery to full consciousness usually occurs within eight hours. This removes the need for strict and prolonged medical and nursing care, and virtually eliminates the risk of complications. DAPT, itself a weak barbiturate antagonist, is, however, a good synergist to NP13 as well as an excellent respiratory stimulant. It greatly reduces the risk of the toxic manifestations that sometimes occur when NP13 is given rapidly and in large doses. These substances may provide an effective means of controlling anesthesia induced by barbiturates both by permitting a rapid recovery to the conscious state when desired and by counteracting any emergency such as laryngeal spasm. DAPT may also be of value as a nonspecific respiratory stimulant.

A New, Mild Sedative-Hypnotic, A Piperidine Derivative (Noludar). O. Brandman, J. Coniaris and H. E. Keller. J. M. Soc. New Jersey 52:246-253 (May) 1955 [Trenton, N. J.].

Noludar (3,3-diethyl-2,4-dioxopiperidine or Ro 1-6463) is a new nonalkaloidal central nervous system depressant that is not a barbiturate. A series of 500 patients was given excessive doses nightly for four weeks. After a rest period of two weeks, the patients were reexposed to high doses of the drug for one week. Frequent hemograms failed to reveal any toxic hematological findings. Noludar was given for night sedation to 1,015 patients; 1,000 of these received 250 mg. doses for three consecutive nights. The resulting average sleep induction period was 29 minutes and the average duration of sleep seven hours. Side-effects such as drowsiness, vertigo, and nausea were experienced by only 13 patients; 979 patients rated the hypnotic effect of Noludar as at least equal to barbiturates they had previously received. Noludar was administered for daytime sedation to 510 patients who were given 50 mg. doses three times a day for four weeks. This plan provided sedation comparable to that obtained from 16 mg. of phenobarbital three times a day. There was no drowsiness or oversedation from Noludar, and all patients were pleased with its action. The authors conclude that Noludar is an effective sedative-hypnotic of fairly prompt onset and short duration of action that, in therapeutic doses, is distinguished by excellent tolerability and meets with wide patient acceptance.

Combined Nitrogen Mustard and Urethane Therapy of Chronic Granulocytic Leukemia. E. Keibl. Wien. klin. Wchnschr. 67:356-361 (May 20) 1955 (In German) [Vienna, Austria].

Seven patients between the ages of 27 and 69 years with chronic granulocytic leukemia were given daily intravenous injections of 1.25 mg. of nitrogen mustard and of 1.5 gm. of ethyl urethane, i. e., half of the usual daily doses of both drugs. Treatment was continued until leukocyte values of about 20,000 per cubic millimeter were reached, and that occurred usually at the end of the second week. Marked maturation in the peripheral blood picture and notable diminution in the size of the liver and spleen occurred simultaneously. Except for occasional nausea three to four hours after the injection, the treatment was well tolerated; it was therefore possible to give the patients, after their discharge from the hospital, one to two injections per week if necessary. The duration of the prompt remission that occurred in all of the author's patients varied from several months to one and a half years. In the third year of their disease, three of the patients, who had been treated exclusively with nitrogen mustard combined with urethane, were cautiously treated with small doses of x-ray. An unexpectedly prompt drop in the leukocyte count with remission resulted within one week. A change of therapy makes daily blood counts, or counts at least every second day, imperative. The metabolism of the leukocytes was similar to that after treatment with urethane alone, but instead of occurring only on the 20th day after the institution of treatment, it occurred on the 4th day. The simultaneous decrease of respiration and increase of glycolysis that occurred toward the end of the combined treatment can be interpreted as a sign of peripheral cell damage, a behavior similar to that after treatment with nitrogen mustard. The combined treatment with nitrogen mustard and urethane seems to potentiate the effect of both drugs at the beginning of the treatment, and a certain balance in the late phase of the treatment may prevent the risk of late damage caused by the administration of larger doses of urethane.

Oral Administration of Penicillin: A Comparative Study of Benzathine Penicillin, Procaine Penicillin and Potassium Penicillin. S. E. Budolfsen, S. E. J. Hansen and E. Rud. Acta pharmacol. et toxicol. 11:49-54 (No. 1) 1955 (In English) [Copenhagen, Denmark].

A comparative study was made of the penicillin concentrations obtained in the serum of bedridden patients between the ages of 18 and 70 years after oral administration of 600,000 international units of potassium penicillin, procaine penicillin, or benzathine penicillin. Results showed that potassium penicillin is absorbed more rapidly, gives a higher concentration, and causes a more prolonged penicillemia than benzathine penicillin or procaine penicillin. The authors' studies suggest that oral administration of 600,000 I.U. of potassium penicillin gives a peak concentration slightly lower than that obtained by intramuscular injection of 200,000 I.U. with the penicillemia persisting for a slightly longer period.

Seasonal Variations in Sensitivity of Microorganisms to Antibiotics. B. J. McMahon. South. M. J. 48:480-485 (May) 1955 [Birmingham, Ala.].

The appreciation of the importance of the specificity of antibiotics for infections has prompted the elaboration and use of methods to determine such specificity. A survey was conducted to ascertain whether bacterial sensitivity could be accurately determined in a shorter time than the usual 48 to 72 hour period required by present laboratory methods. Likewise, it was intended to determine whether there may be a seasonal variation in the sensitivity of micro-organisms to antibiotics. The degree of sensitivity of micro-organisms cultured from the ears, nose, and throats of 230 patients with and without infections to chlortetracycline, chloramphenicol, oxytetracycline, and penicillin was determined over a 12 month period. Using the disk method to determine the sensitivity, a comparison was made between the 72 hour technique and an experimental 24 hour technique. The experimental 24 hour technique was 80.4% as accurate as the 72 hour methods. This is an advantage to the patient in that 48 hours is saved toward the more accurate administration of the antibiotic specific to his infection. The sensitivity tests showed a definite trend toward a greater resistance of the micro-organisms to the antibiotics during the months of August, September, and October.

PATHOLOGY

Cases of Disseminated Lupus Erythematosus Diagnosed as Idiopathic Thrombocytopaenic Purpura. S. L. Eversole Jr. Bull. Johns Hopkins Hosp. 96:210-222 (May) 1955 [Baltimore].

Thrombocytopenia and purpura may be the presenting or dominant symptom of disseminated lupus erythematosus, leading to the erroneous diagnosis of idiopathic thrombocytopenic purpura. Other symptoms of disseminated lupus erythematosus may not be recognized for months or even years following the onset of the purpura. The author studied six cases of thrombocytopenic purpura in which the relationship to disseminated lupus erythematosus was established only at autopsy or on finding the characteristic histological lesion in the spleen removed at operation for what was thought to be the idiopathic type of thrombocytopenic purpura. These cases demonstrate the importance of considering disseminated lupus erythematosus in all patients with thrombocytopenic purpura. The pathological lesion in the spleen that, when well marked, is generally regarded as pathognomonic of disseminated lupus erythematosus, is the "onion peel" fibrosis around arteries, particularly the small arteries, in the Malpighian bodies. The presence of disseminated lupus does not necessarily contraindicate splenectomy. Indeed, the thrombocytopenia and purpura may be alleviated, as was the case in five of the six patients presented in this paper.

Rigidity of Thorax and Myocardosis. W. Selberg. Deutsche med. Wchnschr. 80:749-752 (May 13) 1955 (In German) [Stuttgart, Germany].

Of 1,800 autopsies performed at the pathological institute of the Barmbek General Hospital in Hamburg, Germany, in the course of 18 months, "paramyloidosis" of the heart was observed in 20 cases of senile systemic disease of the thorax. The series included 14 men and 6 women between the ages of 72 and 92 years and with an average age of 84 years at the time of their deaths. Complete systemic disease of the senile thorax consists in its terminal stages of calcification and ossification of the bronchi, trachea, larynx, and costal cartilage; severe spondylosis deformans of the thoracic and cervical vertebral column with senile kyphosis; marked chronic pulmonary emphysema with bronchiectasis; formation of cartilaginous and bony spicules in the pleura; hypertrophy of the right side of the heart; pulmonary sclerosis; and muscular hypertrophy of the esophagus, pyloric antrum, and pylorus. The incidence of this complete systemic disease of the senile thorax increases with far advanced age and in the author's cases it was observed to be associated with the occurrence in the cardiac interstices of basophilic edema fluid rich in protein. Although this type of edema may also be observed frequently in young and middle-aged persons with rigidity of the thorax, it is most marked in old people with senile rigidity of the thorax. Homogeneous focal deposits of proteins in the endocardium and myocardium, particularly of the right side of the heart, were found in 60% of the old people with rigidity of the thorax. Although these albuminous deposits have a certain similarity to genuine amyloid on staining, they can be distinguished from it by the almost complete absence of metachromasia with methyl violet. There is also a topographic difference since the genuine amyloid, as a rule, is limited to the vascular apparatus and may be found in the heart in generalized forms only. Destruction of the enclosed muscle fibers was observed in all the larger foci of the author's cases. The metabolic process and the capacity for contraction of the muscle cells was thus made difficult. The fact that these changes were limited to old people suggests that from an etiological point of view one has to deal primarily with old-age changes of the mesenchymal metabolism. The rigidity of the thorax is a manifestation of the basic senile metabolic disturbance, but not a cause of the "paramyloidosis" of the heart.

Effect of Corticoids upon the Development and Toxicity of Transplantable Croton-Pouch Tumors. H. Selye. Endocrinology 56:516-522 (May) 1955 [Springfield, Ill.].

The growth and systemic toxicity of transplanted "croton-pouch tumor No. 2," a highly malignant fibrochondro-osteosarcoma that had first been induced in croton-oil treated animals, was examined in intact and in adrenalectomized rats treated with hydrocortisone, desoxycorticosterone acetate, or both these steroids. Using the "neoplastic granuloma pouch technique," in which tumor-tissue suspensions are introduced into regular, symmetrical subcutaneous air sacs, it was found that hydrocortisone greatly inhibits both the growth and the exudate-forming ability of croton-pouch sarcomas, but only in the adrenalectomized animals, i. e., in the absence of adrenal tissue. The antihydrocortisone action of the living adrenals could be duplicated in the adrenalectomized animals by simultaneous treatment with hydrocortisone and desoxycorticosterone acetate. These findings, as well as the effect of hydrocortisone on the body weight and death rate of these tumor-bearing rats, suggest that desoxycorticosterone acetate imitates the hydrocortisone-antagonizing effect of intact adrenal tissue in many respects.

Demonstration of Role of Irritating Factors and of Trauma in Elective Localization of Antibodies in Shock Organs. B. N. Halpern, G. Biozzi and B. Benacerraf. Acta allergol. 8:181-188 (No. 3) 1955 (In French) [Copenhagen, Denmark].

A series of experiments was performed on guinea pigs to show that contingent irritative factors (occasional irritation, repeated trauma, local infections, or occupational lesions) can influence the preferential localization of antibodies in a tissue. The intradermal injection of a minimal dose of histamine (0.5 to 3 gammas), traumatization by pinching of the skin or the application of heat, or injection of distilled water will cause local accumulation and preferential fixation of antibodies two hours after the injection of antibodies, while it takes 48 hours to produce the same phenomena in nontraumatized areas. Another experiment consisted of subjecting animals that had been injected with antibodies to inhalations of various irritants, such as aerosols of histamine or acetic acid, ammonia vapors, and hot air. The animals were then subjected, from 1 to 24 hours later, to inhalation or intravenous injection of ovalbumin, whereupon violent bronchial spasm occurred, sometimes strong enough to cause death. Control animals given the same amount of allergen but not having been traumatized showed no signs of bronchospasm, even 24 hours after exposure. The following explanation of the pathological mechanism of these phenomena is offered. Circulating antibodies are fixed in high titer in a region that has undergone trauma of some kind. When they come in contact with the antigen, there is local liberation of histamine that, in turn, causes a new and intense fixation of antibodies. This would explain the localization and elective choice of the shock organ.

The Importance of Microscopic Granulomas (Pseudotubercles) in the Diagnosis of Manson's Schistosomiasis. O. F. de Gouveia and W. D. Beamer. Gastroenterology 28:634-641 (April) 1955 [Baltimore].

One hundred sixty-five biopsies of the rectal mucosa were made in 62 patients with gastrointestinal complaints, selected only because of their prior residence in Puerto Rico, where intestinal schistosomiasis is highly endemic. A diagnosis of intestinal schistosomiasis was made in 23 of the 62 patients with the aid of the biopsies that were positive for Schistosoma mansoni. The biopsies of 13 of the 23 patients showed microscopic granulomas or typical schistosomal pseudotubercles, consisting of a zone of lymphocytes, eosinophils, monocytes and some epitheloid and giant cells, surrounded by a layer of concentrically disposed fibroblasts. Four of these 13 patients had granulomas alone, containing scarcely recognizable portions of ova of S. mansoni in some. The remaining nine showed in addition ova without fibroblastic response. Biopsy of the rectal mucosa is an efficient means of determining at one examination whether the patient has been infected with S. mansoni. The presence of the typical pseudotubercle, the schistosomal granuloma with identifiable ova, is sufficient for diagnosis. When readily recognizable ova are not present, the finding of a granuloma should cause suspicion and encourage further search for diagnostic material although activity of the disease can be ascertained only on finding viable ova.

In Vitro Studies on the Combination of Penicillin and Streptomycin. O. Kylin and E. -U. Wall. Acta med. scandinav. 151:281-288 (No. 4) 1955 (In English) [Stockholm, Sweden].

Tests of sensitivity to a combination of penicillin and streptomycin were carried out with a medium consisting of peptone-free blood agar for Micrococcus (Staphylococcus) aureus, Micrococcus albus, enterococcus, Escherichia coli, Klebsiella aerobacter, other coliform bacteria, Proteus, and Pseudomonas pyocyanea. The strains tested included 245 isolated from infections of the urinary tract, 489 from infections of the upper respiratory tract, and 276 isolated from ear infections. The effect of the combined antibiotics on these bacterial strains also was compared to that of the so-called broad spectrum antibiotics, chlortetracycline, chloramphenicol, and oxytetracycline. On the whole, the results of the sensitivity tests confirmed the general observation that the combination of penicillin and streptomycin may have a synergistic or indifferent effect against certain strains, but that it never produces an antagonistic effect. Inhibition of bacterial growth by penicillin combined with streptomycin thus was generally observed at a concentration much lower than that necessary for inhibition by the most effective of the two components alone. A synergistic effect was statistically demonstrable in less than half of the total number of strains tested. Nevertheless, it was concluded that in vitro the combination is to be preferred both to either of the antibiotics alone and to the broad spectrum antibiotics tested. The combination of penicillin and streptomycin should be of great value both as a therapeutic agent for infections of unknown cause and as a means of decreasing the dose of streptomycin in cases of infections particularly sensitive to streptomycin but resistant to penicillin. In such cases it may be possible to obtain an increase in the therapeutic range, thereby decreasing the risk of undesirable side-effects from streptomycin. The risk of development of resistant strains may also be lower with the combination than with either of these antibiotics alone. Compared with the concentrations of penicillin combined with streptomycin necessary for inhibition, the broad spectrum antibiotics on the whole showed a much lower efficacy. In most cases the differences in concentration were great, in some even up to 10 times. Only against Escherichia coli and Enterococci did the broad spectrum antibiotics give relatively better results.

RADIOLOGY

Experiences with the Use of Radioactive Cobalt in the Form of Plastobalt for Irradiation Treatment of Malignant Tumors. H. Lehrner and L. Psenner. Wien. klin. Wchnschr. 67:373-374 (May 27) 1955 (In German) [Vienna, Austria].

Plastobalt, a preparation of radioactive cobalt in a plastic material adjustable to the size and form of the malignant tumor to be treated, was used at the Central Roentgen Institute of the University of Vienna for surface therapy of carcinoma of the pinna in four patients, of the lip in one patient, and of the penis in one patient. Plastobalt was used for intracavitary treatment of tumors of the upper jaw in four patients and of carcinoma of the mastoid process in one patient. It was also used for irradiation treatment of a movable carcinoma of the vocal cord after operative removal of the ala of the thyroid cartilage. In the patient with carcinoma of the lower lip, inner and outer Plastobalt plates were applied. Irradiation was carried out for 60 hours in the course of 10 days; 6,000 r were administered to the outer skin and 8,000 r to the mucosa. The tumor disappeared completely, and there was no recurrence after one year. The four patients with carcinoma of the pinna received a surface dose of 5,500 to 6,500 r. All were free of symptoms one year after the treatment. Because of the favorable conditions of absorption of the hard gamma rays in the cartilage, there is much less risk of necrosis in the pinna with this type of irradiation than with short-distance roentgen irradiation. The patient with carcinoma of the penis received a dose of 4,800 r in the course of 11 days. Two years later there was no local recurrence of the carcinoma, but an inoperable lymph node infiltration was detected 16 months after the treatment. Of the four patients with tumors of the upper jaw, two were given immediate postoperative irradiation treatment and two received irradiation treatment for late recurrences at the posterior wall of the resection cavity; 5,600 to 7,100 r were applied to the surface of the wall of the resection cavity within four to five days. Of the two patients who were given immediate postoperative treatment, one had no recurrence two years later, and the other could not be followed up. Of the two patients with late recurrences, one died of intercurrent disease and the other had been observed for only three months. The patient with carcinoma of the mastoid had no recurrence after 18 months. The patient with carcinoma of the vocal cord received 5,200 r within 120 hours. After six months there were no clinical or microscopic signs of recurrence. Although Plastobalt has been used for only about two years, the authors believe that it has already shown itself to be a gamma emitter characterized by simplicity in technical handling, many-sided applicability, and a special suitability for the treatment of surface lesions.

Follow-Up Study of 100 Cases of Carcinoma of the Prostate Treated with Radioactive Gold. H. D. Kerr, R. H. Flocks, H. B. Elkins and others. Radiology 64:637-641 (May) 1955 [Syracuse, N. Y.].

The group 2 classification of prostatic cancer is applied to moderately advanced carcinoma in which local extension has made radical surgery of little use and in which distant metastases could not be demonstrated. One hundred patients with group 2 prostatic carcinoma were treated by interstitial radiation with radioactive gold, Au^{198}, that was inserted through a retropubic incision. They were followed for 15 to 27 months and were studied again one year later. Fifty-two additional patients were followed for a minimum of one year and a maximum of two years. A study of these patients indicates that rectal complications can be eliminated by careful use of the radioactive material, with only one significant complication remaining, i. e., calculus formation in the sloughing tissue. It is practically impossible to sterilize any except the smallest of neoplasms with radioactive material alone. Consequently the authors resorted to surgical removal of the tumor before or after interstitial injection of the Au^{198}. The time and method of surgical removal and of additional injections must be individualized for each patient. Subsequent perineal injections must be given for residual tumors. Of the first 100 patients followed for 24 to 39 months on June 1, 1954, 46 were alive, 18 with disease and 28 without disease; 54 were dead and of these at least 13 died of causes other than carcinoma. Since all of these patients would eventually die of cancer if treated palliatively, it seems worth while to continue this method in an effort to save some.

Comparative Studies of Discography and Myelography. J. Wolkin, M. D. Sachs and G. H. Hoke. Radiology 64:704-713 (May) 1955 [Syracuse, N. Y.].

The diagnosis of herniation or protrusion of an intervertebral disk can usually be made on the basis of the history and a careful examination. Myelography has been used extensively in patients in whom the clinical findings are inconclusive, but in the last decade Lindblom and others have emphasized that herniation of an intervertebral disk can be diagnosed by a direct puncture of the disk with the injection of 35% iodopyracet. They are of the opinion that this diagnostic method is more accurate and more rapid than myelography, as well as less hazardous to the patient. In an effort to verify this conclusion, both disk punctures and ethyl iodophenylundecylate myelography were performed in 18 patients. In nine others, discography alone was performed. The 27 patients had clear-cut clinical evidence of herniated disk, and in most neither myelography nor discography was considered necessary for the diagnosis. In 11 of the 18 patients subjected to discography and myelography, both procedures were accurate. Considered alone, myelography was completely accurate in 9 of 18 patients, partly accurate in 3, falsely negative in 4, falsely positive in one, and unsatisfactory in one. Discography alone was completely accurate in 18 of 27 patients, partly accurate in 7, falsely positive in one, and unsatisfactory in one. There were no false negative discograms. These results show that the accuracy of discography is superior to that of myelography. A normal discogram offers strong evidence against the diagnosis of a herniated lumbar disk. Unsuspected multiple herniations are seen more often during discography. Reduplication of radicular pain during the disk injection may further support the diagnosis of a herniated disk. Discography is a direct, apparently safe, relatively accurate, and rapid adjunctive procedure for the diagnosis of herniated lumbar intervertebral disks.

Hypaque, a New Urographic Contrast Medium. J. C. Root and W. C. Strittmatter. Am. J. Roentgenol. **73**:768-770 (May) 1955 [Springfield, Ill.].

Sodium 3, 5 diacetamido-2, 4, 6-triiodobenzoate (Hypaque), a new urographic contrast medium, was administered to 187 men and 163 women, ranging in weight from 97 to 280 lb. (44 to 127 kg.). All 350 patients were ambulatory, but no attempt at other selection was made. Each patient received 25 cc. of Hypaque given intravenously, usually in the antecubital vein. The length of time taken for the injection varied from one to three minutes. Postinjection reactions such as nausea, bad taste, vomiting, dizziness, warmth, flushing, hives, and moderate pain at the site of the injection occurred in 34 patients (9.7%), a significantly lower incidence than that reported when other contrast mediums were used. The incidence of reactions to Hypaque was nearly three times higher in the 20 patients with a history of previous allergies than it was in the remaining patients. The urograms were rated on the basis of diagnostic quality according to the criteria devised by Hoppe. Visualization of the urinary tract was excellent in 152 patients, good in 165, fair in 24, and poor in 9. In general, the "pyelogram-like" contrast was striking. Thus the value of Hypaque as a urographic contrast medium is twofold: it makes possible excellent visualization of the urinary tract, and it diminishes the number of postinjection reactions.

Quantity of Radiation Received by the Reproductive Organs of Patients During Routine Diagnostic X-Ray Examinations. R. W. Standord and J. Vance. Brit. J. Radiol. **28**:266-273 (May) 1955 [London, England].

Radiation can reach the reproductive organs either from the direct beam during investigations of the pelvic region or by scatter during investigations of other parts of the body. In men it can be measured directly by placing a suitable instrument in contact with the scrotum during the radiographic examination. In women the quantity can only be deduced from measurements made on the skin, and the determination of factors to convert these into ovarian doses becomes the primary problem. The surface point selected for women was on the anterior abdominal wall 1 in. medial to and 1.5 in. below the anterosuperior iliac spine. One of two Perspex ionization chambers, which had volumes of 10 and 1 ml. respectively, was affixed to the patient at this point during each routine radiographical investigation. Factors for converting surface into ovarian doses were determined on cadavers and models. The average quantities of radiation in milliroentgens received per film, as measured directly for men and deduced for women were based on measurements made on 1,500 patients. The records of about 9,000 patients were analyzed with regard to sex, age and type of examination. Since the authors were interested chiefly in possible genetic effects of irradiation, they considered only those age groups concerned with the highest birth rates. The values finally obtained for the average quantities of radiation reaching the reproductive organs per patient per examination are of the order of 35 milliroentgens for men and 60 for women. Regions such as the skull, the chest, and the extremities, which account for about 80% of all x-ray examinations, contribute only 1% to the average amount of radiation received by the reproductive organs; whereas examinations of the pelvic region contribute 60 to 70% of this radiation but only 2 to 4% of the examinations. It is these, therefore, that carry the greatest potential danger. Whether the levels of radiation reported in this paper are genetically significant must be decided by geneticists. If the quantities should be reduced, this can be done most readily by using the smallest possible fields in all examinations of the abdomen and pelvis and by reducing the numbers of examinations in these regions. This approach is considered likely to be more successful than any technical one such as the development of high kilovoltage radiography.

Thorotrast Spleen. E. Samuel. Brit. J. Radiol. **28**:204-205 (April) 1955 [London, England].

Thorium dioxide sol (Thorotrast) when injected into the blood am for diagnostic purposes is taken up by the reticuloendo- system and is slowly excreted by the kidneys. Samuel two cases of Thorotrast spleen. Although the roentgenologic appearance of Thorotrast in the spleen is quite distinct, when it is seen for the first time it may be a source of confusion. This is especially so as some patients, who show such deposits, may be unaware of the injection of Thorotrast. In both cases a cerebral angiogram using Thorotrast as a contrast medium had been performed under general anesthesia and the patient was consequently unaware of the injection. The symptoms presented by both patients did not appear to be connected with the Thorotrast spleen. Roentgenologically the Thorotrast spleen is characterized by a generalized increase in density of the splenic shadow unassociated with any enlargement of the spleen. The increase in splenic density has a fine mottled appearance, and the whole spleen has a granular appearance. There is no increase in the density of the splenic capsule. There is usually an enlargement and some increase in density of the liver shadow although this may not be as marked as that in the spleen. Conditions that have to be differentiated radiologically are: perisplenic calcification, miliary calcification, and calcification in a splenic cyst.

Acute Renal Failure Following Angiography: Especially the Risk of Repeated Examination, Revealed by Eight Cases (Two Deaths). N. Alwall, S. Johnsson, A. Tornberg and L. Werkö. Acta chir. scandinav. **109**:11-19 (No. 1) 1955 (In English) [Stockholm, Sweden].

In a series of eight patients with renal injury following angiography during the years 1950 to 1954 two died. Although in several instances the injury could be explained by repeated injections of contrast medium at the same investigation, there is no apparent reason in the others. Strict indications for these examinations are therefore necessary. The risks may be diminished by lessening the dose of the contrast medium. Renal function should be carefully checked before angiography is performed. The check should not be limited to determination of the nonprotein nitrogen only. Determination of the maximal concentration capacity combined with an Addis quantitative test would seem to supply more reliable information on the renal function.

Radiation Parotitis from Radioactive Iodine Therapy. R. G. Rigler and P. W. Scanlon. Proc. Staff Meet., Mayo Clin. **30**:149-153 (April 20) 1955 [Rochester, Minn.].

A woman came to the Mayo Clinic, Rochester, Minn., with a history of progressive pain over the left posterior aspect of the pelvis in the region of the sacroiliac articulation of some nine months' duration. This was associated with some limp and a sciatic type of extension of pain into the posterior aspect of the left thigh and occasionally into the calf. Roentgenograms of the pelvis revealed a well-demarcated area of lytic destruction involving the medial upper end of the left ilium adjacent to the sacroiliac articulation. On March 19, 1954, the posterior aspect of the left iliac crest was opened and a metastatic malignant lesion the size of a small fist was curetted. The pathological report of the curetted material was grade 1 (Broders' method) thyroid adenocarcinoma. The woman's physician stated that a left hemithyroidectomy had been performed in June, 1951, for removal of a 2 by 2 by 2 cm. tumor of the left upper pole of the thyroid. Tissue studies verified the clinical diagnosis of a malignant lesion. The patient had not been informed of the malignant character of the growth. Ten days after the removal of the metastasis from the ilium, the patient was given a 500 μc. tracer dose of radioactive iodine (I^{131}) in an attempt to ascertain whether or not there was any residual functioning thyroid tissue remaining in the ilium. A survey revealed a slightly increased counting rate over the lytic lesion in the ilium. Complete thyroidectomy was done on April 3, 1954, in an endeavor to stimulate the uptake of radioactive iodine by the metastatic growths in the ilium. Pathological examination of removed thyroid failed to reveal residual malignant tissue. Ten days after the thyroidectomy a second tracer dose of 300 μc. of I^{131} was administered. This likewise revealed very slightly increased activity over the lytic lesion in the ilium. It was felt that insufficient I^{131} was collecting in the metastatic growth to warrant administration of a therapeutic dose of I^{131}. A repeat tracer study in June again showed only a slightly increased uptake in the iliac lesion, but in view of the excretion pattern of the tracer dose it was felt that enough of the dose was being retained in the body to make administration of a therapeutic dose of I^{131} worth while. Consequently, on June 23, 1954, a 150 mc. dose of I^{131} was administered orally. This therapy was without immediate adverse effects except that 12 hours after the dose had been given the patient experienced bilateral symmetrical parotid swelling associated with moderately severe pain on opening the mouth or swallowing. The parotitis responded well to ice bags and salicylate therapy and completely subsided within the next 48 hours. In view of the fact that the patient had previously had viral mumps, it was felt that this syndrome was unquestionably radiation parotitis from I^{131} therapy, a condition the authors had not previously encountered. A perusal of the literature failed to reveal any mention of this entity as a complication of radioactive isotope therapy.

Roentgenotherapy of Backache and Sciatica. P. Pizon. Presse méd. 63:519-522 (April 6) 1955 (In French) [Paris, France].

Application of the technical factors involved in the absorption of x-rays by the soft tissues and bone to the problem of irradiating the lumbar spine (the last three lumbar vertebrae and the sacroiliac joints) for the relief of backache and sciatica shows that selective irradiation of the vertebrae can be obtained by using half value layer radiation between 0.7 and 1 mm. of copper with a focal distance of 40 cm. The total dose of 1,500 r to the skin (measured in air) should be given in 10 equal doses, and the best results are obtained when the first six sessions are given at the rate of three a week and the last four at the rate of two a week. Two parallel fields, 6 by 17 cm., should be used, each receiving half the total dose, or 750 r. The size of the fields should be reduced to 3 by 15 cm. to avoid any possible damage to the ovaries when the patient to be treated is a young woman and the half value layer radiation should then be equal to or less than 0.7 mm. of copper. None of the 97 women in the author's series of 205 patients showed any postradiation disturbance of menstrual function. Immediate cures were obtained in 62% of the patients, 155 of whom had backache and 50 true sciatica; 29.7% were improved; and only 8.3% were therapeutic failures. Roentgenotherapy thus remains the most effective and least injurious method of treating acute or chronic backache and sciatica. The common term found in all the processes that give rise to the pains of essential backache and sciatica is the existence of a neurovegetative, or more precisely a sympathicotonic, disturbance resulting from a change in intervertebral mechanics. The sympathicolytic effect of x-ray treatment suppresses the reflex vasomotor reaction and so puts an end to the ischemia and edema provoked by the neuroendothelial irritation of the synovial capillaries and the meninges. The efficacy of the treatment depends on the coordinated use of the x-rays, analgesics, general antirheumatic therapy, and local measures designed to correct osteoarticular defects in the spine. Failure occurs only when the irritative reflex is reestablished by premature resumption of physical activity or because the predisposing mechanical conditions have not been corrected.

Observer Error in the Interpretation of Photofluorograms and the Value of Dual Reading in the Danish Mass Campaign. E. Groth-Petersen and A. V. Møller. Acta tuberc. scandinav. 30: 209-230 (No. 3-4) 1955 (In English) [Copenhagen, Denmark].

The authors' past experience with experimental multiple reading of photofluorograms showed that individual differences in interpretation are great and a significant number of lesions are overlooked in routine interpretations by a single observer. Each of four experienced tuberculosis specialists failed to detect 32% of the total number of subsequently verified, clinically significant, pulmonary changes recorded in the photofluorograms. There was also a great deal of overreading. Dual reading of the photofluorograms was introduced as the routine method in the mass tuberculosis campaign in Denmark. The first reading was made, as before, at the local chest clinics by the chief physicians or qualified assistants. The second reading was made by central readers who did not see the report of the first reading. All suspected pulmonary lesions were checked by large roentgenograms at the chest clinics, where preliminary roentgen diagnoses were made and the necessary follow-up steps taken. The present study was based on 455,000 35-mm. films from 12 different counties. The readers found suspected lesions in the lungs of 10,905 persons (2.4%), but the first and second readers were in agreement on only 35% of the findings, varying from 20 to 45% in the various counties. The chest clinic examination at once found active tuberculosis requiring treatment in 306 patients, but only 257 of these cases were discovered by the first photofluorogram reader. Thus the second reader added 49 patients, an increase of 19%. In the second reading 16 patients were overlooked, so that a total of 65 of these cases of tuberculosis were recognized by only one of the photofluorogram readers. Tubercle bacilli were found at once in 56 of the missed patients. The chest clinic examination also revealed 2,918 other pathological lung changes that were considered to be clinically significant, i. e., requiring treatment or observation, but only 2,035 of these had been detected by the first reader; the second reading added 883, an increase of 43%. In the remaining 7,257 persons reporting for further examination at the chest clinic, either nothing abnormal was found or, in a small number of cases, pulmonary changes that were considered to be definitely healed were observed. Thus, of the 10,481 checked positive photofluorogram findings, 7,257 must be described as "false positive" and 3,224 as "true positive." Dual reading resulted in an overreading of 2.25 false positives to each true positive. The result of the first reading alone was 2.14 false positives to each true positive. Thus the increase of the relative overreading caused by dual reading was not significant. A systematic reader difference that is of interest in the future clarification of sources of error was noted. It is concluded that, though dual reading is far from an ideal solution to the problem of checking errors, the help it provided was great enough for it to become generally applied.

Roentgen Diagnosis of Small Polyps in the Colon and Rectum. L. Andrén, S. Frieberg and S. Welin. Acta radiol. 43:201-208 (March) 1955 (In English) [Stockholm, Sweden].

Of 1,274 patients who were subjected to colonic examination with the so-called double-contrast enema technique, one or more polyps were detected in 159 (12.5%). This technique consists of the combined use of a fairly dense contrast medium (50 mg. of dioxyphenylisatin [Neodrast] and 1,950 mg. of lactose) and of insufflation of air into the intestine with the aid of a clyster pump. The polyps were localized in the rectum in 99 patients. Of the total number of 214 polyps observed, 191 (90%) were less than 1 cm. in diameter and 132 (60%) were less than 5 mm. in diameter. The increased incidence of polyps in the authors' patients as compared with that reported by other workers may be ascribed to the fact that the authors largely succeeded in detecting the smaller polyps. This was probably the result of teleroentgenography combined with the use of fine focus tubes and a dense contrast medium.

Gas Embolus as a Roentgen Sign of Fetal Death. E. Samuel and K. Gunn. Am. J. Roentgenol. 73:974-978 (June) 1955 [Springfield, Ill.].

In fifteen cases of fetal death roentgenologic examination revealed intravascular gas in three main portions of the fetal cardiovascular system, namely, in the heart, the umbilical cord, and the fetal vessels. Intracardiac gas was present in all 15 cases; gas in the umbilical cord was observed in 5, and gas was present in the abdominal vessels in 9. No gas was demonstrated in the pulmonary or cerebral vessels in any case. Intravascular gas is not an infrequent sign of fetal death. It is postulated that gas in the fetal intravascular tree is not necessarily a late sign of fetal death since it occurred in five of the authors' cases before the conventional and well known roentgenologic signs (Spalding's sign and Hartley's Ball sign) had appeared. In 5 of the 15 cases, intravascular gas was the only roentgenologic sign of fetal death. Gas in the fetus arises not necessarily as a physicochemical change in the blood elements but rather results from a disturbance in the potential gradient between the maternal and the fetal blood pressures. The frequency with which gas is located in the heart itself suggests that the amount of gas may be sufficient to account for the actual cause of death, i. e., that the fetus actually dies from an intracardiac gas embolus. The possibility of the Rh factor as the cause of the underlying placental change is considered, and it is noted that in one case extensive placental calcification was shown.

A Clinical Investigation of the Chronic Effects of Radium Salts Administered Therapeutically (1915-1931). W. B. Looney, R. J. Hasterlik, A. M. Brues and E. Skirmont. Am. J. Roentgenol. 73:1006-1037 (June) 1955 [Springfield, Ill.].

The chronic effects of radium salts administered therapeutically until 1932, at which time radium for internal administration was removed from listing in the New and Nonofficial Remedies of the American Medical Association, were studied in 19 schizophrenic patients who between 1930 and 1931 were given intravenous injections at weekly intervals with a soluble salt of radium in doses of 10 mcg. of the element. The total doses ranged from 70 to 450 mcg. An additional 20 patients who had received radium orally, intravenously, or intramuscularly as a therapeutic procedure from 20 to 30 years ago and 6 radium dial painters were studied. Total retained radium and radon/radium ratios were determined in all patients and roentgenographic examination of the entire skeleton was done on all patients. The results of hematological studies carried out in 24 patients were neither striking nor diagnostic of radium poisoning. Roentgenograms showed a general correlation between the level of body burden of radium and the frequency and severity of osseous lesions. At body burdens of 0.4 mcg. or more clinically recognizable and unique bone lesions were present. These lesions increased in number, in extent of distribution throughout the skeleton, and in severity with increasing body burdens of radioactivity. No patient who received radium salts exclusively by the parenteral route (and thus probably received only radium) developed a bone neoplasm attributable to the presence of radium in the skeleton, but significant nonneoplastic lesions were observed in those persons containing as little as 0.4 mcg. of what was shown to be only radium salts, uncontaminated with more than 0.66% mesothorium. The osseous lesions revealed by the roentgenograms were classified in three groups. The significant minimal roentgenographic lesions in group 1 consisted of multiple 1 to 2 mm. by 5 to 20 mm. areas of decreased density occurring with great frequency and located most prominently in the fibula, tibia, radius, ulna, humerus, and femur. Related lesions were "punched out" areas of decreased density in the skull that closely resembled, but had to be differentiated from, the lesions of multiple myeloma. When the small areas of decreased density in the long bones became multiple, they lent a streaked appearance to the bone. The importance of these areas of decreased density lies in the fact that they could be noted in patients who were asymptomatic, in the absence of other more marked lesions, and that they occurred with a lesser body burden of radium than any other lesion. The lesions in group 2 consisted of areas of apparently increased density associated closely with areas of decreased density and showing varying degrees of change in trabecular pattern that were characteristic of this group. Group 3 included certain major changes that may be described as areas of aseptic necrosis, often with sequestration, occurring in certain sites of predilection, such as the head of the femur, the mandible, tarsal scaphoid, and vertebral bodies. Taken by itself, the appearance of one of these areas of aseptic necrosis in an otherwise apparently healthy adult is not diagnostic of radium poisoning but is suggestive.

PHYSIOLOGY

Thrombopenic Index in Allergic States. H. Storck. Semaine hôp. Paris 31:1897-1902 (May 30) 1955 (In French) [Paris, France].

The use of the thrombopenic index as an indicator of an allergic reaction in man is based on the fact that the number of thrombocytes is reduced by from 15 to 40% in the peripheral blood 90 minutes after exposure of the patient to the allergen. Patients who are not in an allergic state show only slight variations in the number of thrombocytes. This specific thrombocytic reaction is produced by exposure to alimentary, inhalatory, and drug allergens, as well as by those that are infectious in character. The present report deals only with drug allergies. The offending agent can usually be readily identified in cases of simple drug allergy, but in certain conditions, e. g., various forms of purpura, agranulocytosis, asthma, etc., in which withdrawal of all the active medications whose allergic effect is unknown might lead to a fatal aggravation of either the primary or the secondary condition reliable tests have a decisive practical value. Study of more than 200 patients with many different forms of drug allergy showed that the thrombocytopenic index is both reliable and specific. A few precautions, however, should be observed in applying the test: the technician should be experienced in counting thrombocytes by means of a phase microscope, and the fact that certain drugs, notably histamine and adrenaline, have an effect on the thrombocyte count, regardless of sensitization, should be kept in mind in interpreting the results. In vitro studies show that agglutination of the thrombocytes is increased when an allergen is added to oxalated blood. A high index of agglutination is found in sensitized patients. Comparison of the agglutination index with the in vivo decline in the thrombocyte level shows a definite parallelism between the two, with an agglutination index of from 1.4 to 2 corresponding to a reduction of from 15 to 40%. The active principle in the agglutination phenomenon is a thermolabile, dialyzable, specific factor that is contained in the patient's serum and that acts in the presence of a complementary thermolabile, nondialyzable, nonspecific factor. The in vitro test is especially valuable because it makes it possible to obtain a specific diagnosis without exposing the patient to the dangers of contact with the allergen. Both the agglutination and the thrombocyte-reduction tests are negative in nonsensitized persons.

The Physiology of the Aging Process in the Musculoskeletal Apparatus. E. M. Bick. Geriatrics 10:274-277 (June) 1955 [Minneapolis].

This study brings into focus certain aspects of the physiology of the aging process of the musculoskeletal system that apply to geriatric orthopedics. It deals with the process of physiological senescence and does not refer to the relative frequency of specific trauma or inflammatory joint disease in the elderly patient whose life has been exceptionally rugged, or the obese patient suffering from mechanically abnormal wear and tear of the articular tissues. In the physiology of the normal aging musculoskeletal apparatus, articular cartilage is found to be the most stable. Articular cartilage is a relatively avascular tissue that, when not injured by major trauma or the repeated minor traumas of mechanically unsound joint function, is apt to persist undamaged well into the late decades. Muscle tissue remains all but unchanged except as its power is influenced by circulatory or central nervous system deterioration. The skeletal deformities of the aged are mostly due to the collapse of soft and brittle bone at its points of major stresses. Endocrine and metabolic deficiencies and systemic decrease in the peripheral vascular supply are the physiological substrata of diminishing bone production in the aging skeleton. These deficiencies and dysfunctions interfere with the synthesis and distribution of the chemical elements needed for the production of bone substance. Clinically speaking, because of these deficiencies aged bone is soft and brittle. These two physical defects produce most of the commonly manifested skeletal problems of aging persons. Among them are generalized osteoporosis, avascular necrosis at areas of maximum stress, fractures at the brittle neck of the femur, compression of the vertebral body, and, in the presence of faulty joint mechanics, collapse of subchondral bone. When failing osteogenesis in the aging person can be controlled or retarded, orthopedic defects will be largely prevented. The chief physiological problem of orthopedic geriatrics is the synthesis of bone protein.

BOOK REVIEWS

Industrial Dust: Hygienic Significance, Measurement, and Control. By Philip Drinker, S.B., Ch.E., Professor of Industrial Hygiene, Harvard School of Public Health, Cambridge, Mass., and Theodore Hatch, B.S., S.M., Professor of Industrial Health Engineering. Graduate School of Public Health, University of Pittsburgh, Pittsburgh. Second edition. Cloth. $10. Pp. 401, with 148 illustrations. Blakiston Division, McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36; 95 Farringdon St., London, E.C.4, England, 1954.

This long-awaited second edition of the definitive textbook on industrial dust amply fulfills all expectations. Much of the material is highly technical, as it must be for engineers and hygienists confronted with the thorny problems of identifying, measuring, controlling, or removing troublesome or noxious material, frequently of ultramicroscopic particle size. Nevertheless, physicians interested in environmental hygiene in industry or from the broader community aspects of air pollution will find this volume indispensable. The chapters of greatest interest to industrial physicians, pathologists, and respiratory physiologists are those covering the effects of dusts and fumes on man, descriptions of inert and toxic dusts, physiochemical factors in pneumonoconiosis, and dust retention in man. Practical experience, common sense, and a forthright acknowledgment that time and accumulating data change concepts of maximum allowable concentrations make the discussions of the dusty trades particularly acceptable. Those interested in a critical appraisal of the engineering sections would do well to consult reviews in appropriate engineering or industrial hygiene publications.

You and Your Child's Health. By Paulette Kahn Hartrich. Foreword by Milton I. Levine, M.D. Cloth. $3. Pp. 208. Harper & Brothers, Publishers, 49 E. 33rd St., New York 16, 1955.

Designed for parents in order to help them to understand their child's reaction to the frightening experiences associated with sickness, this book could better be titled, "You and Your Child's Illness." The author tells the reader how a child establishes its feelings of security and certain relations to his parents and then points out what parents can and should do to strengthen and maintain these feelings during the trying periods that occur in childhood. Among the high points are discussions of the child's reaction to shots and other discomforts of child-physician relationships, the problem of the dentist, how to make a hospital experience less threatening, preparation for an anesthetic, family relations in chronic illness, and a host of other situations that can undermine the child's attitude toward his world. Though this book is basically a book for parents, it should be helpful to physicians who treat children and to all of the professional people associated with the physician in child care. Many of these suggestions may be new and certainly will furnish a review to those engaged in child health service.

The Therapy of Skin Tuberculosis. By Gustav Riehl, M.D., Professor of Dermatology, University of Vienna, and Oswald Köpf, M.D., Assistant, Department of Dermatology, Wilhelminen Hospital, Vienna. Translated and revised by Ernest A. Strakosch, M.D., Ph.D., Director, Department of Dermatology, Presbyterian Hospital, Denver. Publication number 229, American Lecture Series, monograph in Bannerstone Division of American Lectures in Dermatology. Edited by Arthur C. Curtis, M.D., Chairman, Department of Dermatology and Syphilology, University of Michigan, Ann Arbor. Cloth. $6.75. Pp. 247, with 8 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1955.

This monograph presents the treatment of tuberculosis of the skin in great detail. Inasmuch as tuberculosis of the skin has become somewhat uncommon in routine dermatological practice in the United States, it is fitting that this volume has been written by several of the outstanding European authorities on the subject. The major chapters are concerned with the techniques and rationale of vitamin D therapy. The remaining sections present the authors' experience with thiosemicarbazone, *p*-aminosalicylic acid, isoniazid, physical and surgical techniques, and general supporting measures. At the time of publication, the authors had probably not used pyrazinamide, cycloserine, or some of the newer drugs yet to be evaluated in the therapy of skin tuberculosis. Although the text is detailed and exceedingly thorough, the writing is ponderous and heavily interspersed with references and observations of a distracting nature. Much of this material could have been condensed or deleted to the advantage of the book. The format is pleasing. The illustrations are few and well chosen. The book is recommended for dermatologists and investigators interested in the therapeutic management of tuberculosis of the skin.

Physicians' Office Attendants Manual. Section for Office Work. By Henry B. Gotten, M.D., Associate Professor of Medicine, University of Tennessee, Memphis. Section for Laboratory Work: By Douglas H. Sprunt, M.D., Professor of Pathology, University of Tennessee. Cloth. $3.75. Pp. 93, with 15 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1955.

This book, written by an internist and a pathologist, covers many important and many seemingly unimportant bits of information. Its greatest value for a physician training his own office assistant may well be in the unimportant information—the things he forgets to talk about. The first portion of the section for office work contains good general information, easily understood, and one reading should suffice. The second portion, however, becomes a reference text with detailed information on the setup for certain examinations. The entire section for laboratory work is well written, and the detailed instructions can be used for reference. This book should be valuable to every physician who employs medical assistants.

Analytical Cytology: Methods for Studying Cellular Form and Function. Edited by Robert C. Mellors, M.D., Ph.D. Foreword by Francis O. Schmitt, Ph.D. Cloth. $15. Various pagination, with illustrations, Blakiston Division, McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36; 95 Farringdon St., London, E.C.4, England, 1955.

This book covers the major physical and chemical methods currently in use in study of cell morphology and function. There are nine chapters: Cytophotometry by Pollister and Ornstein; Cytochemical Staining by Novikoff; Phase-Contrast, Interference-Constrast, and Polarizing Microscopy by Barer; Ultraviolet Microscopy and Microspectroscopy by Nurnberger; Fluorescence Microscopy by Richards; Electron Microscopy by Selvy; Radioautography by Fitzgerald; Historadiography by Engström; and X-Ray Diffraction Techniques by Oster. This book should be of great value to workers interested in the newer physical approaches to cytology. Principles as well as methods are thoroughly and competently presented and are made understandable without detailed physical and mathematical discussions. Although much of this material is available elsewhere, it will be found very helpful to have it collected in one volume.

Cellular Metabolism and Infections. Edited by E. Racker. Symposium held at New York Academy of Medicine March 4 and 5, 1954. Symposia of Section on Microbiology, New York Academy of Medicine, number 8. Cloth. $4.80. Pp. 196, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1954.

This small book makes no systematic attempt to assemble the available data on the pathology of infections at the metabolic level but includes a series of discussions, often unrelated to each other, that fall into two areas: (1) selected topics of comparative biochemistry, emphasizing differences in structural and metabolic patterns in hosts and parasites, and (2) selected aspects of the metabolism of infected cells. The participants in the symposium include many outstanding workers whose fields of investigation overlap, to varying degrees, under the title of this volume. Specific topics include energy production, formation of

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These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

adaptive enzymes, metabolic approaches to chemotherapy, cytochemical and biosynthetic events in bacteria infected with phage, and alterations of cellular metabolism during virus infections of animals and bacteria. This book is not meant for the practicing physician but rather for the research worker and the scholar. It is concerned with an important field in which much remains to be done before even data already available can be coherently integrated. The symposium will stand as a record of how, in 1954, investigators viewed the biochemical problem of infection at the cellular level.

Poliomyelitis. Contributors: Robert Debré et al. World Health Organization, monograph series no. 26. Cloth $8. £2; 24 Swiss francs, Pp. 408, with illustrations. Columbia University Press. 2960 Broadway, New York 27; World Health Organization, Palais des Nations, Geneva, Switzerland, 1955.

This monograph presents the progress of research, the ideas, and the explanations that have accrued in the past 15 years. Facts critically appraised and fully documented serve either to introduce the reader to the field or to acquaint those already in it with the present trends and the direction of future progress. The vast literature has been well covered in the five sections on epidemiology, clinical aspects, virology, immunology, and control. Each section ends with succinct conclusions. Except for the section on control, each of the five subjects is divided into three parts, each discussed by eminently qualified authors, who review their subjects in the light of their own experiences in nine different countries from the standpoints of clinical observations, intensive and prolonged research, or international public health.

The reasons why poliomyelitis is now regarded as a highly infectious, frequently epidemic disease of civilization with the alimentary tract as the primary portal of entry are fully explained by John R. Paul (United States). Surveys conducted in Africa and elsewhere by J. H. S. Gear (South Africa) have shown that, where poliomyelitis is endemic or hyperendemic, most of the clinical infections occur among children. Under these conditions, as in most infectious diseases, poliomyelitis tends to be less severe and, in this case, less likely to cause paralysis. The epidemicity grows with advances in hygiene and living standards, and it then attacks adults. As M. J. Freyche and J. Nielsen (World Health Organization, Geneva) emphasize, it cannot then fail to bring about a higher case fatality rate. The section on the clinical aspects, written by Robert Debré and Stéphane Thieffry (France), the management of acute poliomyelitis by W. Ritchie Russell (England), and the management of respiratory and bulbar paralysis by H. C. A. Larsen (Denmark) offer the practitioner information in synoptic form. The text is amplified by good illustrations and a table on the therapeutic results in life-threatening poliomyelitis. The review on the physical and chemical characteristics of the virus by S. Gard (Sweden), aside [illegible]m presenting evidence that the viruses of this group are [illegible]ng the hardiest of all known animal viruses, directs attention [illegible] many insufficiently studied subjects of practical importance. With the new tools made available by the tissue culture method developed by John F. Enders (United States), the solutions of many of the problems are brought into reach. Even a casual glance at the chapter on diagnostic tests by A. J. Rhodes, W. Wood, and Darline Duncan (Canada) impresses the reader with the progress made in recent years. The four annexes to this chapter pool the experiences of many virologists and thus furnish conveniently the only up-to-date presentation of many of the procedures now in use. As a background to enable the physician to better understand the problems involved in vaccination, the chapter by A. B. Sabin (United States) deserves careful reading. Principles and objectives are clearly outlined, and the merits of vaccines made with killed virus are compared with those made with living, avirulent variants. In a companion article Hilary Koprowski (United States) discusses his initial studies on the immunization of human subjects with an orally administered attenuated strain. The procedure itself is safe for the vaccinated, and the degree of elicited antibody response indicates that this procedure may warrant more exploratory field trials with other attenuated types. Such studies are now in progress. Many of the questions raised by authors with respect to the alimentary carrier state established by this method await an answer. According to W. McD. Hammon (United States), gamma globulin supplies a low level of antibody and is temporarily preventive under certain conditions but has a limited field of wide-scale application. Although effective in limited control field trials, the dosage factor, not yet determined, is of great importance. In his review of the public health measures, A. M.-M. Payne (World Health Organization, Geneva) discusses all the well-known, general, and specific procedures to reduce the spread of infection, the nonspecific factors influencing the incidence of paralysis, the role of the laboratory, and the essential position of active immunization. He concludes that, as procedures for active immunization become available, they should be supported by measures designed to reduce the amount of virus in the environment.

A carefully prepared index and the excellent printing and binding make this handy volume attractive and most useful to the library of a practicing or research physician and an excellent reference for the student.

Essentials of Orthopædics. By Philip Wiles, M.S., F.R.C.S., F.A.C.S., Senior Orthopædic Surgeon, Middlesex Hospital, London. Second edition. Cloth. $10. Pp. 538, with 400 illustrations. Little, Brown and Company, 34 Beacon St., Boston 6, 1955.

This is an excellently arranged textbook. The printing is of such size as to make easy reading and the many illustrations add a great deal to understanding the text. The drawings are particularly well done. If criticism were to be given this phase, it would be that the x-ray reproductions on the whole do not come up to what we have been accustomed to seeing in British books. Many of the x-rays are not clear, but others are very good. We probably have been spoiled in the past with the excellence of British x-ray reproduction. The colored drawings are superior in quality. The book itself is written in typical, clear-cut British style and makes for very interesting reading. It is not too technical so that the book has definite application both to the medical student as well as to those on advanced training status and certainly is a good book for every orthopedist to have in his library.

The references are almost solely to other British authors with only occasional reference to American authors. This does not detract from the book but again shows the author's close relationship to his local colleagues. There is little in general with which one can disagree, with a possible exception being the treatment recommended for tuberculosis. More authors and investigators in the United States are treating tuberculosis surgically than is indicated in this book. The author continues to hold the extreme ultraconservative British view on this subject. The opinion expressed here does not detract from the value of the book in any way but merely emphasizes the author's own management of this disease. The size of the book is handy. It does not become burdensome to hold and one does not realize that it is over 500 pages. This ease of handling facilitates using the book for frequent reference.

Practical Endocrinology. By Lewis M. Hurxthal, M.D., Head of Department of Internal Medicine, Lahey Clinic, Boston. In cooperation wit A. Seymour Parker, M.D., Physician, Department of Internal Medicine Lahey Clinic, and Hirsh Sulkowitch, M.D., Research Associate, Lahe Foundation. Handbooks for general practitioner. Cloth. $7. Pp. 318 with 17 illustrations. Landsberger Medical Books, Inc., distributed solel by Blakiston Division of McGraw-Hill Book Co., 330 W. 42nd St., Ne York 36, 1955.

This book has no pretension of being an exhaustive text i endocrinology but instead successfully presents to the practicin physician the diagnosis and treatment of the endocrine cond tions he is likely to meet in practice. The arrangement of th text varies somewhat from the usual, considering first the dia nosis and treatment of the endocrine disorders of infancy an childhood, then the endocrine disorders associated with th major endocrine glands. Special chapters are devoted to hype insulinism, gynecomastia, and female hirsutism. The availab hormones and their use in general practice are also considere Most intriguing is the chapter on office laboratory tests. Th familiar Sulkowitch test, the circulatory eosinophil, lymphocyt and sperm count techniques, as well as the iodine vapor meth for staining vaginal smears are described and seem well withi the capacity of the average physician's office laborator The assay of 17-ketosteroids by the Callow-Talbot-Sulkowit method is another matter and seems out of place in this text, since it would require suction apparatus, preparation of a fresh standard solution each day, a reflux condenser, a colorimeter, and, most important of all, hours of time and correction for interfering chromogens by means of a complicated calculation. Nevertheless this is a practical text and a most valuable, clear, and not too complex presentation of endocrine problems encountered by the general practitioner.

Pain: Its Mechanisms and Neurosurgical Control. By James C. White, M.D., F.A.C.S., Chief of Neurosurgical Service, Massachusetts General Hospital, Boston, and William H. Sweet, M.D., F.A.C.S., Associate Visiting Neurosurgeon, Massachusetts General Hospital. With assistance in psychiatric sections of Chapters IV and X from Stanley Cobb, M.D., and Frances J. Bonner, M.D., Assistant in Psychiatry, Massachusetts General Hospital. Cloth. $17.50. Pp. 736, with 134 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1955.

The treatment of severe pain by surgical means is a fairly recent innovation. Only in the last 20 years has the subject grown to sufficient size to warrant a book such as this. The authors have analyzed the records of 420 patients suffering from persistent severe pain on whom operation was justified. Most of the patients were seen between 1935 and 1949, but a few, particularly those with cardiac pain, go as far back as 1927. The clinical material since 1950 has not been analyzed, as the authors, quite justifiably, wish to have at least a five year follow-up period before reaching a conclusion in regard to the efficiency of any particular procedure. The first part of the book discusses the fundamental aspects of pain in the end organs and the afferent tracts to the central nervous system. Care is taken to evaluate also the psychiatric aspect of pain, particularly the neurotic component so frequently a disturbing factor in the treatment of patients with pain as the presenting symptom. A second part of the book deals with surgical techniques such as nerve block, neurectomy, rhizotomy, and the interruption of pain pathways in the spinal cord, medulla, and elsewhere in the nervous system. The third section discusses specific painful conditions such as the neuralgias of the peripheral nerves, amputation stumps, phantom limbs, trigeminal neuralgia, and cephalic pain, with a special chapter on painful conditions associated with the thoracic viscera, particularly the heart, aorta, and lungs, and a second chapter on abdominal visceral disease. The bibliography is extensive; there is an ample index by author and subject; the illustrations are adequate; but some of the case records are given in more detail than seems necessary for a book having a general appeal. Certain of the work sheets used might be omitted in future editions, as they are printed as attached tables folded into the book and thus particularly vulnerable to hard usage. The book in general would be improved by the deletion of much that is repetitious, and part of the working material would not be missed if omitted except by a few special students. The authors, leaders in the field of neurological control of pain, have written an outstanding book that sets an excellent pattern in a relatively new but ever-increasing aspect of the treatment of disease.

The Biologic Effects of Tobacco with Emphasis on the Clinical and Experimental Aspects. Edited by Ernest L. Wynder, M.D., Head, Section of Epidemiology, Sloan-Kettering Institute for Cancer Research, New York. Foreword by Joseph Garland, M.D. Cloth. $4.50. Pp. 215, with 20 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6; J. & A. Churchill, Ltd., 104 Gloucester Pl., Portman Sq., London, W.1, England, 1955.

The expressed purpose of this book is to determine what is fact and what is fancy about the possible relationship of tobacco and tobacco smoke to human health. The evidence for and against smoking as a calculated risk to health is assembled in eight well-written, well-documented chapters. These deal with the chemistry and pharmacology of tobacco and its relationship to the cardiovascular system, neoplastic diseases, the gastrointestinal tract, and allergic phenomena. An important chapter, called Cause and Effect, dwells on the significance of statistics in establishing some of the associations described.

For some time medical and public attention has been focused on the relationship of smoking and cancer of the lung. There has been a tendency to overlook some of the other effects of smoking on human health, which, in the long run, may eventually prove more significant than the question of lung cancer. For example, relatively little attention has been paid to the relationship of tobacco smoking and the cardiovascular system, at least by a large part of the medical profession and most of the general public. In this connection, it is noteworthy that the direct effect of nicotine in smoking tobacco may be demonstrated by changes in the electrocardiogram, skin temperature, ballistocardiogram, and blood flow (plethysmographic, retinal, and peripheral capillary). The simultaneous use of alcohol will not effectively counteract the effect of smoking on the cardiovascular system. Although there is no evidence that tobacco is an etiological factor in peripheral arteriosclerosis, hypertension, cerebral vascular disease, coronary artery disease, or Raynaud's disease, there is, on the other hand, evidence that, once these diseases are established, the use of tobacco unfavorably influences the clinical course. The use of tobacco by susceptible persons will result in the development and continued activity of thromboangiitis obliterans. Finally, neither protective filters nor denicotinization to the degree now practiced have eliminated the deleterious effect of tobacco on the cardiovascular system.

As a summary of current knowledge affirming or denying tobacco as a factor in human diseases, this book is highly recommended. It is a basic reference work for physicians who want to determine whether they should advise their patients to smoke or not to smoke, and under what circumstances.

Kinesiology of the Human Body under Normal and Pathological Conditions. By Arthur Steindler, M.D., F.R.C.S., F.A.C.S., Head of Orthopaedic Department, Mercy Hospital, Iowa City, Iowa. Cloth. $19.75. Pp. 708, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1955.

After 8 introductory chapters on the mechanical properties of bone, muscle, and related tissues, there follow 7 chapters on the trunk, 21 on the extremities, and 2 on the mechanics of normal and abnormal gaits. There is material of value to the physiologist in the discussions of the mechanics of respiration, the dynamics of the vertebral column, and the normal gait. The minute descriptions of the effects of sprains, fractures, and paralyses in various parts will interest orthopedists and neurologists. This book contains a wealth of instructive illustrations, a collection of references at the end of each chapter, an author index, and a subject index. It represents much hard work and will be helpful to mature students of neurology, orthopedics, and rehabilitation.

Handbook of Pediatrics. By Henry K. Silver, M.D., Associate Professor of Pediatrics, Yale University School of Medicine, New Haven, Conn., C. Henry Kempe, M.D., Assistant Professor of Pediatrics, University of California School of Medicine, San Francisco, and Henry B. Bruyn, M.D., Assistant Professor of Pediatrics and Medicine, University of California School of Medicine, San Francisco. Cloth. $3. Pp. 550. Lange Medical Publications, P. O. Box 1215, Los Altos, Calif., 1955.

This book is small enough to be carried in one's back pocket. It does not contain complete information on the subject of pediatrics, and the authors do not make any such claim. There are a number of this type of textbooks already in circulation. Since the authors invite suggestions and criticisms, it might be pointed out to them that they should ask the publisher to use a much larger print, for it is extremely difficult to read this book for any length of time without becoming tired.

Ancient Therapeutic Arts: The Fitzpatrick Lectures Delivered in 1950 & 1951 at the Royal College of Physicians. By William Brockbank, M.A., M.D., F.R.C.P. Cloth. $5. Pp. 162, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., [n.d.].

This book describes several of the older therapeutic procedures that have dominated medical thought and practice for a number of centuries—the enema, cupping, leeching, the various methods of counterirritation, and, more recently, the intravenous injection of fluids, from the time of its invention down to the present day. The story is well told; the illustrations are informative and revealing; and the reader is assured of several hours of absorbing reading.

QUERIES AND MINOR NOTES

BLOOD TESTS BEFORE TONSILLECTOMIES

To the Editor:—*What is the status of doing routine bleeding time and coagulation time tests just before tonsillectomies? What is your opinion concerning the capillary tube coagulation test?*

M.D., New York.

Answer.—Shepeard (Uses and Abuses of Coagulation and Bleeding Time Preceding Tonsillectomy, *Texas State J. Med.* 44:35-37 [May] 1948) expressed aptly what is the present-day informed opinion regarding bleeding and coagulation time just before tonsillectomies: "This interest" [in clotting and bleeding time] "seems to me to be a vestigial remnant of yesteryear and to be out of proportion to its value when weighed against knowledge and teachings concerning the conditions in which the clotting and bleeding phenomena are apt to be abnormal." There have been numerous reports relating experiences from busy nose and throat departments that show without any doubt that bleeding and coagulation time estimations are not practical as tests predicting hemorrhages during or after tonsillectomy. Normal results are not a guarantee of freedom from hemorrhage, and abnormal results have been observed without subsequent bleeding. Dependence on bleeding and coagulation time tends to lead to a false sense of security. Much more important is a careful clinical history with emphasis on questions likely to bring out a bleeding tendency and/or other conditions, such as infections, that may be associated with excessive capillary fragility and so forth. A careful physical examination is also extremely important. Post-tonsillectomy hemorrhages have been shown to come from injury to major blood vessels. If history or physical examination suggest a bleeding tendency, then a thorough study of the blood is indicated. White and differential blood cell counts are certainly of greater potential value as a warning than coagulation and bleeding time alone. Capillary coagulation time is definitely less reliable than the Lee and White technique, because blood obtained by skin puncture is mixed with tissue juice and, therefore, is unsuitable for determining the clotting time.

EDEMA OF THE MACULA LUTEA

To the Editor:—*What is the pathogenesis of "edema of the macula lutea" and of formation of small central cataracts bilaterally at the posterior poles of the lens capsules? Does regular medication of Spansules of Dexedrine, 15 mg., prescribed in the same case for depressive postclimacteric anxiety neurosis have any deleterious effect on the macula edema, on the possible extension of the cataract formation in the lens capsule, or on the blood pressure in general?*

Martin Abraham, M.D., Cincinnati.

Answer.—Edema of the macula lutea occurring in a middle-aged patient and bilateral in its course is considered to be due to an angiospastic condition of the blood supply to the macula. The cause of the angiospasm is speculative, and there are some who claim that there is a psychogenic background in all cases; others believe that it is due to toxoallergic reaction. Another cause for the edema is inflammatory choroiditis producing edema and hemorrhagic extravasation in the macular zone. This is a form of granulomatous uveitis. Another condition producing macular edema is seen in so-called Kuhnt-Junius disease. This is the result of vascular sclerosis with a break in Bruch's membrane and extravasation of blood and serum beneath the retina. The cause of this is unknown but is definitely traced to diseased blood vessels. The formation of posterior subcapsular cataract may be the result of either low-grade uveitis or a congenital defect that progresses along with age. It is also known to occur after middle age as a form of senile cataract. So far as is known, no case of lens opacities or edema of the macula has resulted from the use of Dexedrine.

OYSTERS

To the Editor:—*What part of iron in oysters is utilizable iron? I have read that oysters are second only to liver as a good source of iron from food.*

Thomas Emmett Smith, M.D., Hayes, Virginia.

Answer.—The iron in oysters, as is the case with iron in most foods obtained from animals, is readily assimilated. Because of the high iron, manganese, and copper content, oysters have long been used in the dietary treatment of anemia. In addition to furnishing large amounts of iron, oysters are also rich in protein, being comparable to meat and eggs in this respect. Oysters are also abundant in vitamins A and D and contain significant amounts of thiamine, riboflavin, vitamin C, and calcium. An article entitled "Consideration of Nutritional Value of Oysters" appeared in the Oct. 11, 1941, issue of *Semana médica Española;* an abstract of this article appeared in the May 23, 1942, issue of The Journal, page 378. The author states that "in the dietary treatment of pernicious anemia, oysters can be estimated next to liver as a source of iron."

CALORIC REQUIREMENTS FOR CHILDREN

To the Editor:—*Please estimate the range of caloric expenditures for each age from 6 to 11 of school children who do the absolute minimum in physical exertion. Will you suggest a regimen for each age that would correct obesity and faulty posture? Would you expect a boy of 14 who has been fat for a few years and is now 50% overweight to thin out as he grows older without some change in his diet and habits? Is he a good life insurance risk? How much active play should a child have each day?*

P. Donald Grant, M.D., Outremont, Quebec, Canada.

Answer.—Calorie requirements are determined by the basal heat production, specific dynamic action of food (SDA), expenditure for temperature regulation, physical activity, and needs for growth. These determining factors vary with such data as age, sex, body size, environmental temperature, and adequacy of clothing. Hence, any range of calorie expenditure is but a rough approximation unless one specifies the several most important determining characteristics. For the age range 6 to 11 years, Macy (Nutrition and Chemical Growth in Childhood, Springfield, Ill., Charles C Thomas, Publisher, 1942, vol. 1, p. 148) observed a caloric intake of about 1,780 to 2,300 daily. Basal heat production accounted for 1,010 to 1,358 calories per day and the SDA an additional 10% above the basal. Energy for activity amounted to some 30 to 40% of the intake. Accordingly, an intake for a child at absolute minimum of activity would be somewhat above that of 1,200 to 1,500 calories. Values summarized by McLester and Darby in "Nutrition and Diet in Health and Disease" (ed. 6, Philadelphia, W. B. Saunders Company, 1952, p. 47) estimate the average requirement of a "very quiet boy" from 6 to 11 years old as ranging from 1,600 to 2,000 calories. The intake conforming to the conditions set by the inquirer would probably lie between the estimates from these two sources. Obesity in children is usually a manifestation of maladjustment. Successful control should determine the underlying psychological basis and bring about correction of it. This includes such factors as consideration of the family relationships, the adjustment and acceptance of the child by other children, and the abilities of the child as compared to those of his associates. As Bruch (*Bull. New York Acad. Med.* 24:73 [Feb.] 1948) notes, food stands for love, security, and satisfaction and, hence, has an exaggerated positive value for some maladjusted, insecure individuals. Conversely, activity and social contacts are

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The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

associated with insecurity, threat, and anger. Stringent restriction of calories is usually not required, but a reduction of intake to 1,200 to 1,600 calories with correction of food habits will result in a failure to gain weight, if not an actual loss. If the disproportion between height and weight is not too great, it will readjust as the child grows. If physical disability prevents normal activity, more rigid reduction in caloric intake may be required. The greatest obstacles to successful reduction of calorie intake are oversolicitous parents or grandparents, family eating patterns that result in excessive caloric intakes, and the temptation of candy, nuts, soft drinks, and the like. The 50% overweight boy of 14 years probably will not thin out unless some corrective measures are instituted. The increased health risk of the obese child is less well established than for the adult. While there is no practical method for quantitating active play, it is commonly observed that the healthy, well-adjusted boy of 6 to 11 years enjoys three to five hours of ball playing, swimming, competitive games, riding, hiking, and the like per day. Girls may be somewhat less active.

TACHYCARDIA

To the Editor:—*Please tell me the effects of Rauwolfia on paroxysmal tachycardia and the effects of Veratrum when quinidine is being used.*

Edwin M. Meek, M.D., Greenwood, Miss.

Answer.—There seems to be as yet no extensive experience with the effect of Rauwolfia serpentina on paroxysmal tachycardias. However, it has been reported as helpful in suppressing cardiac irritability in a few cases and deserves more extensive trial (*J. A. M. A.* **157**:946 [March 12] 1955). Quinidine has a "vagolytic" effect on the heart similar to atropine and, in addition, acts directly on heart muscle to increase refractory period and slow conduction. In toxic doses sinoatrial block, atrioventricular block, and ventricular ectopic rhythms may appear. Because of the blocking action on the vagus, quinidine would tend to lessen or prevent the bradycardia usually seen following the administration of effective doses of Veratrum preparations. Large doses of Veratrum may also cause nodal or ventricular tachycardia. Therefore it would seem unwise to add Veratrum in high dosage to the treatment of a patient already receiving quinidine to the limit of tolerance.

POSSIBLY GOUT

To the Editor:—*A woman developed gout many years prior to menopause. The gout has apparently become much worse since. Even minute doses of colchicine produce diarrhea. She also has severe recurrent bouts of vomiting and has asthma, cerebral atrophy with convulsive seizures, and petechial hemorrhages about the skin. The blood cell count is normal. She shows a poor response to Butazolidin even when it is combined with corticotropin.* *M.D., Alabama.*

Answer.—In a patient with symptoms as complicated, especially a woman whose disease antedated menopause, it is essential to be certain that the diagnosis of gout is correct. For example, the coincidence of asthma, convulsions, petechial hemorrhages, and joint disease strongly raise the possibility of periarteritis nodosa. Serial uric acids should be drawn, together with a nonprotein nitrogen test inasmuch as hyperuricemia may accompany renal insufficiency. Skin and muscle biopsy may also be in order. Because of the lack of symptomatic benefit from the medications listed and because of uncertainty as to the diagnosis, a good trial of salicylates should be used. Aspirin should be given to the point of tolerance; between 3.6 and 7.2 gm. daily is usually required. Should the diagnosis of gout be definitely established, and a uricosuric agent be desired, Benemid could be given in a dose of 1 or 2 gm. daily. The dose should be determined in each individual patient by measuring the serum uric acid and daily urinary excretion of uric acid. The drug is usually given indefinitely. Fluids should be forced to reduce the chance of renal stone formation. Since salicylates interfere with the uricosuric effect of Benemid, analgesic effect must be obtained through the use of colchicine, Phenacetin, or other drugs other than salicylates.

ERUCTATION OF HYDROGEN SULFIDE

To the Editor:—*What is the significance of the eructation of hydrogen sulfide? This usually occurs in association with a gastrointestinal upset such as nausea and diarrhea. During the past year the patient has had several recurrences. One stool examination has been negative for ova and parasites. A small gastric diverticulum is present.* *M.D., Alabama.*

Answer.—The eructation of hydrogen sulfide is one of the symptoms of intestinal obstruction. It is one of the strong constituents of the "fecal odor" that is pathognomonic of intestinal obstruction. In the absence of obstruction, it is conceivable that a regurgitant phenomena might produce this symptom. Sulfur is ingested mainly as the amino acids—cystine and methionine of meats. Foods also contain inorganic sulfates, especially sodium and potassium sulfates. Small gastric diverticula are usually of little clinical importance and probably of no importance in this case. It would be interesting to reduce the protein intake during this patient's episodes of eructation. A low protein diet should be helpful if the ethereal sulfides are of exogenous origin.

Reference

Best, C. H., and Taylor, N. B.: Physiological Basis of Medical Practice, ed. 4, Baltimore, Williams & Wilkins Company, 1945, p. 550.

IMPOTENCE

To the Editor:—*Regarding the development of impotence following urethral injuries, particularly as a complication of a fractured pelvis, I contend these are psychogenic or perhaps more properly, iatrogenic in origin. Please discuss.*

M.D., Canada.

Answer.—Certainly, impotence is most frequently psychogenic in origin, but the possibility of traumatic origin cannot be denied following extensive trauma secondary to a fractured pelvis. Urethral injuries involving the prostatic urethra may result in damage to nerve endings, either at the time of injury or at a later date due to scar tissue formation. Such damage may be sufficient to produce impotence. Since most urethral injuries in fractured pelvis involve the membranous urethra, or bulbous urethra, impotence from organic damage is unusual. Fracture of the pelvis may result in complete separation of the urethra, but the prostate usually remains intact and sensation to the verumontanum and ejaculatory ducts is likewise usually intact. Injury to the penile urethra may be accompanied by hemorrhage or later fibrosis of the cavernous bodies with difficulty in erection and secondary impotence.

ANEMIA DURING PREGNANCY

To the Editor:—*What is the current opinion on transfusion for hypoplastic anemia of 9 gm. per 100 cc. hemoglobin level in a six and one-half months' pregnant woman? Abnormalities in the baby are a problem.* *M.D., Oregon.*

Answer.—The usual anemia encountered in pregnancy is due to iron starvation and is likely to be normocytic or microcytic. As a rule it responds to the administration of iron. Usually transfusion is not resorted to unless the hemoglobin level cannot be maintained above 7 gm. per 100 cc. Blood transfusion is effective in raising the hemoglobin level, and when proper safeguards are exercised it can be carried out anytime in the pregnancy. There are no data that implicate blood transfusions in the causation of fetal abnormalities.

FRACTURE OF HIP IN AGED WOMAN

To the Editor:—*What is the usual management of an 84-year-old woman with a broken hip, and what is the prognosis?*

Adrian H. Scolten, M.D., Portland, Maine.

Answer.—If the patient is not in shock, fixation by a pin through the neck of the femur is best as soon as a diagnosis is made. An operation may be done under local or general anesthesia following reduction, depending on the operator's surroundings, experience, and skill. The leg is lightly cradled after operation, and every effort is made to return the patient to some activity at once, such as being lifted properly into a bedside chair or onto a commode. If any shock is present that forbids immediate pinning this must be treated. If recovery is prompt proceed as above. If irreversible, light traction on a broken limb plus meticulous nursing care is required. Any and all nursing care must be of highest quality to avoid decubitus and other complications such as exhausting pain from any movement. Pin fixation may be done after several days' preparation if the patient's temporary recovery warrants. In rare cases expert application of double-body plaster of Paris spica gives good prognosis if nursing care is adequate. Early mortality is around 25%.

PROTHROMBIN DETERMINATION

To the Editor:—*Has any practical procedure been developed for home prothrombin determination?*

R. Favour Jr., M.D., Bowdoinham, Maine.

Answer.—Many techniques of bedside prothrombin determinations are described in literature (e. g., "Micromethod for the Quantitative Determination of Plasma Prothrombin and Proconvertin," *Acta med. scandinav.*, vol. 150, 1954). None of these techniques is sufficiently simple that it may be performed reliably in the patient's home. If patients are to be treated with dicumarol, or drugs of similar action, while they remain at home, it is suggested that the one-stage prothrombin time test (Quick) be determined in the routine manner. Blood is drawn from the patient and then transported to a laboratory proficient in performing the test. If the test can not be performed within a few hours, addition of an accelerator (labile) factor is necessary to obtain valid results. Labile factor is prepared by adsorption of fresh normal plasma with barium sulfate. It should be emphasized that dicumarol treatment, if not adequately guided by trustworthy laboratory results, may lead to dangerous complications.

TREATMENT OF ABRASIONS

To the Editor:—*What is the accepted opinion on the use of tincture of merthiolate as adjunct treatment of abrasions and lacerations of the skin? Is the tissue destruction resulting from its presence in a wound of a sufficient amount to contraindicate its use as an antiseptic or a germicidal agent? Is there any clinical evidence to support a claim that greater risk of wound infection or delayed healing would result if tincture of merthiolate were to be applied to a laceration already prepared by débridement and the use of a good detergent prior to suturing?*

M.D., New York.

Answer.—In recent instruction courses under the aegis of one of the national dermatological societies, it was denied that the organic mercurial antiseptics possess any high germicidal value. Merthiolate, which is the sodium salt of ethyl mercury thiosalicylic acid and contains approximately 49% mercury, was included in the appraisal. It is recognized that under test tube conditions these mercurials exhibit high disinfecting properties, but on application to skin surfaces equal efficacy does not arise. In "Antiseptics, Disinfectants, Fungicides, and Sterilization," edited by Reddish (Philadelphia, Lea & Febiger, 1954), this same denial of high antiseptic properties for mercurials appears. Application for two minutes of 1:1,000 merthiolate only reduced the bacterial flora about 18%. Alcoholic solution of these mercurials was more effective than the corresponding aqueous solution, but the difference was attributed mainly to the antiseptic action of the alcohol. In fact, in some instances, the alcohol alone was more effective than the same alcohol with a mercurial disinfectant content. Of several mercurials examined merthiolate was reported of least value. Merthiolate, in the concentration commonly applied, little damages contact tissues although under rare conditions, such as brought about by the presence of acids, this alkaline solution may be precipitated with the liberation of damaging mercury. Although the application of any chemical disinfectant perhaps always involves a physiological compromise, in the case of merthiolate subsequent wound infection or delayed healing more likely may be attributed to antiseptic shortcomings rather than to significant tissue damage.

BLADDER IRRITABILITY

To the Editor:—*What is the treatment of interstitial cystitis in a 38-year-old woman in good general health and with no gynecology pathology, no signs of obstruction anywhere in the urinary tract, no discernible foci of infection, and no menstrual or hormonal abnormalities. For one and a half years she was treated with sedatives, silver irrigations, and urethral dilatation without any improvement. Cystoscopy shows edematous mucosa, but no ulcerations. There is no diminished capacity of the bladder, only frequency during the day, burning; and severe suprapubic and lumbar pain. Does the absence of frequency during the night rule out the diagnosis of interstitial cystitis?*

M.D., New York.

Answer.—Judging from your clinical findings, it is doubtful that the patient is suffering from interstitial cystitis. The absence of nocturnal frequency, as a rule, excludes such a diagnosis. Since interstitial cystitis almost invariably reduces the capacity of the bladder, a normal capacity, as in this case, would also rule it out. The fact that there is no ulceration in the bladder does not exclude interstitial cystitis. It may be assumed that there is some other factor to account for the patient's bladder symptoms. It is inferred, although not stated in the clinical data, that examination of the urine, including bacteriological study, was negative and that urography disclosed no abnormality. If this is the case, one should think of the possibility of an allergic condition, and a careful study of the patient should be made to exclude it. In some cases of bladder irritability of obscure origin, forcible dilatation of the bladder under an anesthetic, together with topical application of a concentrated solution of silver nitrate has been of therapeutic value. In order to exclude a malignant condition in the edematous mucosa of the bladder, it would be well to obtain a specimen for biopsy.

CIRCUMCISION IN THE FEMALE

To the Editor:—*Is circumcision in the female of any value in the treatment of sexual hyperesthesia or frigidity?*

M.D., New York.

Answer.—The operation of circumcision in the female is an unorthodox procedure that is a remnant of an ancient custom practiced chiefly in equatorial Africa. Many ancient tribes performed this as a ceremonial rite and often included the removal of part or all of the clitoris and a portion of the labia. It is not only a mutilating operation but is entirely unwarranted: it has no place in the regular practice of surgery or gynecology. No benefit is to be derived from female circumcision in cases of sexual hyperesthesia or frigidity.

PREGNANCY TESTS DURING HOT WEATHER

To the Editor:—*The answer in the June 11, 1955, issue of* The Journal, *page 519, regarding false-negative results using Xenopus laevis toads as pregnancy test animal is not complete. Shapiro and Zwarenstein* (Nature **133**:*762, 1934; Shapiro, H. A., and Duncan, D. G.* Clin. Proc. **3**:*186, 1944) discoverers of this test, give the following information. 1. During the breeding season (July to September in South Africa) it is necessary to isolate the test animals for at least one week, and controls should be killed and examined. 2. Toads kept in the laboratory longer than three to four weeks become insensitive to the injections, and false-negatives may be obtained. 3. Ovulation occurs in about 5 to 24 hours. If, after 24 hours, no ovulation has occurred, the animals are killed and a post mortem is performed to search for retained ova. They found that about 7% of positive reactions were oviducal positives. 4. Negative tests should be repeated in 10 to 14 days. 5. In spite of all precautions, every investigator, including the discoverers, have reported false-negative results.*

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JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, MAY-AUGUST 1955

Abstracts have been made of important articles in the following journals in the Current Medical Literature Department of THE JOURNAL during the past four months. Any of the journals, except those starred, will be lent by the Library of the American Medical Association to individuals in Continental United States and Canada who subscribe to its scientific periodicals and to members of the American Medical Association and its student organization. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each periodical. Three journals may be borrowed at a time for a period not exceeding five days. Thus most of these journals are accessible to the general practitioner.

*A. M. A. American Journal of Diseases of Children. Chicago.
*A. M. A. Archives of Dermatology. Chicago.
*A. M. A. Archives of Industrial Health. Chicago.
*A. M. A. Archives of Internal Medicine. Chicago.
*A. M. A. Archives of Neurology and Psychiatry. Chicago.
*A. M. A. Archives of Ophthalmology. Chicago.
*A. M. A. Archives of Otolaryngology. Chicago.
*A. M. A. Archives of Pathology. Chicago.
*A. M. A. Archives of Surgery. Chicago.
Acta allergologica. Copenhagen.
Acta chirurgica belgica. Brussels.
Acta chirurgica scandinavica. Stockholm.
Acta medica scandinavica. Stockholm.
Acta obstetricia et gynecologica scandinavica. Stockholm.
Acta pharmacologica et toxicologica. Copenhagen
Acta radiologica. Stockholm.
Acta tuberculosea scandinavica. Copenhagen.
American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne.
American Journal of Gastroenterology. New York.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Medicine. New York.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Chicago.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physical Medicine. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Tropical Medicine and Hygiene. Baltimore.
American Review of Tuberculosis. New York.
American Surgeon. Atlanta, Ga.
Anaesthesia. London.
Anesthesiology. New York.
Angiology. Baltimore.
Annales de dermatologie et de syphiligraphie. Paris.
Annales de médecine. Paris.
Annals of Allergy. Minneapolis.
Annals of Internal Medicine. Lancaster, Pa.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
Annals of Tropical Medicine and Parasitology. Liverpool.
Antibiotics & Chemotherapy. Washington, D. C.
Archiv für klinische Chirurgie. Berlin.
Archiv für orthopädische und Unfall-Chirurgie. Munich.
Archives of Disease in Childhood. London.
Archives des maladies de l'appareil digestif et des maladies de la nutrition. Paris.
Archives des maladies du coeur et des vaisseaux. Paris.
Archives of Pediatrics. New York.
Archives of Physical Medicine and Rehabilitation. Chicago.
Archivio italiano di chirurgia. Bologna.
Archivio italiano di urologia. Bologna.
Archivio per le scienze mediche. Turin.
Archivos uruguayos de medicina, cirugía y especialidades. Montevideo.
Archivum chirurgicum neerlandicum. Arnhem.
Ärztliche Wochenschrift. Berlin.
Australian and New Zealand Journal of Surgery. Melbourne.
Beiträge zur Klinik der Tuberkulose. Heidelberg.
Belgisch tijdschrift voor geneeskunde. Leuven.
Blood. New York.
Boletín médico del Hospital infantil. Mexico.
Bordeaux chirurgical. Bordeaux.
Brain. London.
British Heart Journal. London.
British Journal of Anaesthesia. Altrincham.
British Journal of Dermatology. London.
British Journal of Ophthalmology. London.
British Journal of Plastic Surgery. Edinburgh.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis and Diseases of the Chest. London.
British Journal of Urology. Edinburgh.
British Journal of Venereal Diseases. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the Los Angeles Neurological Society. Los Angeles.
California Medicine. San Francisco.
Canadian Journal of Public Health. Toronto.
Canadian Medical Association Journal. Montreal.
Cancer. Philadelphia.
Chirurg. Berlin.
Chirurgia toracica. Rome.
Circulation. New York.
Circulation Research. New York.
Clinica. Bologna.
Clinica pediatrica. Bologna.
Connecticut State Medical Journal. New Haven, Conn.
Cuore e circolazione. Rome.
Delaware State Medical Journal. Wilmington.
Deutsche medizinische Wochenschrift. Stuttgart.
Diabetes. New York.
Die Medizinische. Stuttgart.
Diseases of Chest. Chicago.
Electroencephalography and Clinical Neurophysiology. Montreal.
Endocrinology. Springfield, Ill.
Fortschritte auf dem Gebiete der Röntgenstrahlen vereinigt mit Röntgenpraxis. Stuttgart.
Gastroenterologia. Basel.
Gastroenterology. Baltimore.
Gazzetta medica italiana. Milan.
Geburtshilfe und Frauenheilkunde. Stuttgart.
Geriatrics. Minneapolis.
Giornale di clinica medica. Bologna.
Giornale italiano di chirurgia. Naples.
Giornale di gerontologia. Florence.
Giornale di medicina militare. Rome.
Glasgow Medical Journal. Glasgow.
GP (Journal of American Academy of General Practice). Kansas City, Mo.
Harefuah. Jerusalem-Tel Aviv.
Hautarzt. Berlin.
Hawaii Medical Journal. Honolulu.
Helvetica chirurgica acta. Basel.
Hoja tisiológica. Montevideo.
Industrial Medicine and Surgery. Chicago.
International Journal of Leprosy. New Orleans.
Irish Journal of Medical Science. Dublin.
Journal of Allergy. St. Louis.
Journal of the American Geriatrics Society. Baltimore.
Journal of Applied Physiology. Washington, D. C.
Journal of Aviation Medicine. St. Paul.
Journal of Bone and Joint Surgery. Boston and London.
Journal de chirurgie. Paris.
Journal of Clinical Endocrinology and Metabolism. Springfield, Ill.
Journal of Clinical Investigation. New York.
Journal of Clinical Pathology. London.
Journal of the Faculty of Radiologists. Bristol.
Journal of the Florida Medical Association. Jacksonville.
Journal of Hygiene. London.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Indianapolis.
Journal of International College of Surgeons. Chicago.
Journal of Investigative Dermatology. Baltimore.
Journal of Iowa State Medical Society. Des Moines.
Journal of the Irish Medical Association. Dublin.
Journal of the Kansas Medical Society. Topeka.
Journal of the Kentucky State Medical Association. Bowling Green.
Journal-Lancet. Minneapolis.
Journal of Laryngology and Otology. London.
Journal of the Louisiana State Medical Society. New Orleans.
Journal of the Maine Medical Association. Portland.
Journal de médecine de Lyon. Lyon.
Journal of the Medical Association of the State of Alabama. Montgomery.
Journal of the Medical Association of Georgia. Atlanta.
Journal of the Medical Society of New Jersey. Trenton.
Journal of Mental Science. London.
Journal of the Michigan State Medical Society. Lansing.
Journal of the Mount Sinai Hospital. New York.
Journal of the National Cancer Institute. Washington, D. C.
Journal of Neurology, Neurosurgery and Psychiatry. London.
Journal of Neurosurgery. Springfield, Ill.
Journal of Obstetrics and Gynaecology of the British Empire. London.
Journal of Oklahoma State Medical Association. Oklahoma City.
Journal of Pathology and Bacteriology. Edinburgh.

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* Cannot be lent.

Journal of Pediatrics. St. Louis.
Journal of Pharmacology and Experimental Therapeutics. Baltimore.
Journal of the Royal Institute of Public Health and Hygiene. London.
Journal of South Carolina Medical Association. Florence.
Journal of Thoracic Surgery. St. Louis.
Journal of Urology. Baltimore.
Kinderärztliche Praxis. Leipzig.
Klinische Wochenschrift. Berlin.
Lancet. London.
Laryngoscope. St. Louis.
Laval médical. Quebec.
Lyon chirurgical. Paris.
Maandschrift voor kindergeneeskunde. Leiden.
Maryland State Medical Journal. Baltimore.
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Münchener medizinische Wochenschrift. Munich.
Nederlandsch tijdschrift voor geneeskunde. Amsterdam.
Nervenarzt. Berlin.
Neurology. Minneapolis.
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New York State Journal of Medicine. New York.
New Zealand Medical Journal. Wellington.
Nordisk medicin. Stockholm
North Carolina Medical Journal. Winston-Salem.
Northwest Medicine. Seattle.
Obstetrics and Gynecology. New York.
Ohio State Medical Journal. Columbus.
Pediatrics. Springfield, Ill.
Pédiatrie. Lyon.
Pediatriya. Moscow.
Pennsylvania Medical Journal. Harrisburg.
Physiological Reviews. Washington, D. C.
Plastic & Reconstructive Surgery. Baltimore.
Policlinico (sezione pratica). Rome.
Postgraduate Medicine. Minneapolis.
Practitioner. London.
Prensa médica argentina. Buenos Aires.
Presse médicale. Paris.
Proceedings of the Society for Experimental Biology and Medicine. Utica, N. Y.
Proceedings of Staff Meetings of Mayo Clinic. Rochester, Minn.
Quarterly Journal of Medicine. Oxford.
Radiology. Syracuse, N. Y.
Rassegna internazionale di clinica e terapia. Naples.
Revista de la Asociación médica argentina. Buenos Aires.
Revista da Associação médica brasileira. São Paulo.
Revista chilena de pediatría. Santiago.
Revista clínica española. Madrid.
Revista española de oto-neuro-oftalmología y neurocirugía. Valencia.
Revista de investigación clínica. Mexico, D. F.
Revista de medicina y cirugía. Barranquilla.
Revista paulista de medicina. São Paulo.
Revue du praticien. Paris.
Revue de la tuberculose. Paris.
Rhode Island Medical Journal. Providence.
Riforma medica. Naples.
Rivista di medicina aeronautica. Rome.
Rocky Mountain Medical Journal. Denver.
Sang. Paris.
Schweizerische medizinische Wochenschrift. Basel.
Semaine des hôpitaux de Paris. Paris.
Settimana medica. Florence.
South African Journal of Clinical Science. Cape Town.
Southern Medical Journal. Birmingham, Ala.
Strasbourg médical. Strasbourg.
Surgery. St. Louis.
Surgery, Gynecology and Obstetrics. Chicago.
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Texas State Journal of Medicine. Austin.
Thorax. London.
Tidsskift for den norske lægeforening. Oslo.
Transactions of the Royal Society of Tropical Medicine and Hygiene, London.
Tubercle. London.
Tumori. Milan.
Ugeskrift for læger. Copenhagen.
Union médicale du Canada. Montreal.
United States Armed Forces Medical Journal. Washington, D. C.
Urologia. Treviso.
Virginia Medical Monthly. Richmond.
West Virginia Medical Journal. Charleston.
Western Journal of Surgery, Obstetrics and Gynecology. Portland, Ore.
Wiener klinische Wochenschrift. Vienna.
Wiener medizinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Madison.
Zeitschrift für die gesamte innere Medizin und ihre Grenzgebiete. Leipzig.
Zeitschrift für Tuberkulose. Leipzig.
Zeitschrift für Urologie. Leipzig.
Zentralblatt für Chirurgie. Leipzig.
Zentralblatt für Gynäkologie. Leipzig.

SUBJECT INDEX

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "ab," abstracts; the asterisk (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word with the following exceptions: Foundations, Lectures, Moving Pictures, and Prizes, under "F," "L," "M," and "P" respectively. "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Acad.—Academy
Am.—American
A.—Association
Coll.—College
Commn.—Commission
Comm.—Committee
Conf.—Conference
Cong.—Congress
Dist.—District
Div.—Division
Found.—Foundation
Hosp.—Hospital
Indust.—Industrial
Inst.—Institute
Internat.—International
M.—Medical
Med.—Medicine
Nat.—National
Pharm.—Pharmaceutical
Phys.—Physicians
Soc.—Society
Surg.—Surgery
Surgs.—Surgeons
S.—Surgical

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